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PHYSICAL SELF-PERCEPTIONS IN WHEELCHAIR SPORT PARTICIPANTS

By

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"Those who achieve this target (PhD) are frequently not the most intelligent. They are the most stubborn, the most methodical and the most persistent. They are the one's that always find a way to overcome problems, difficulties and obstacles ... they are the one's that never give up"

In memoriam of Trevor Williams (1998)

ABSTRACT

The study of self-perceptions in the physical domain is still an underdeveloped area of research in many countries, such as Portugal. This issue is of even further interest when assessed in groups with physical impairment, whose perceptions may be formulated in different ways on different criteria as a result of their disability. The extent to which exercise and sport participation influences the development of self-perception and perceived competence in people with disabilities is also an unexplored area of research. There is a body of literature on disability and sport participation indicating that there is a great potential for involvement in sport to improve mental well-being in people with disabilities (Sherrill, 1997). Further research and well-controlled studies are required to support this presumption.

The general aim of the present research is to develop a better understanding of the importance of exercise and sport participation in the development of self-perceptions in groups with physical disability. The present thesis involves a sequence of three studies focusing on the construction of self-perceptions in different Portuguese population groups with and without disability using a Portuguese version of the Physical Self-Perception Profile – PSPP-P (Fonseca, Fox, & Almeida, 1995). The use of this instrument in groups with physical disability requires statistical support for its validity and reliability in the Portuguese population that has not been totally achieved yet.

The pattern of mean score values presented in this study was similar to the one found in the development of the instrument with USA youth population. Study one provided support for the hierarchical organization of the self-perceptions in the physical domain as well as for gender differences with males scoring higher mean score values than females for all PSPP sub-domains as well as for GSE. However, structural equation modelling (SEM) did not provide support for the original four sub-domain factor model (Fox & Corbin, 1989) and a new three sub-domain factor model was proposed combining Condition and Sport items into a new sub-dimension, the Physical Confidence. Study two provided some critical information about PSPPp structure when used in groups with physical disability. Limited support was found for the existence of PSW as a mediator. The hierarchical structure exists among PSPPp sub-scales but not with GSE. An unusual lack of relationship between Physical Self-Worth and Global Self-Esteem was found suggesting that self-perceptions in the physical domain develop in an alternative way to the one some often confirmed for different age groups without disability. This lack of relationship was confirmed in the qualitative study which identified Body Attractiveness and individual attitudes towards the body including defensiveness and denial, and growth through adversity as some of the major mechanisms involved in the process.

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José Pedro Leitão Ferreira

AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the Regulations of the University of Bristol. The work is original except where indicated by special references in the text and no part of the dissertation has been submitted for any other degree. Any views expressed in the dissertation are those of the author and in no way represent those of the University of Bristol. The dissertation has not been presented to any other University for examination either in the United Kingdom or overseas.

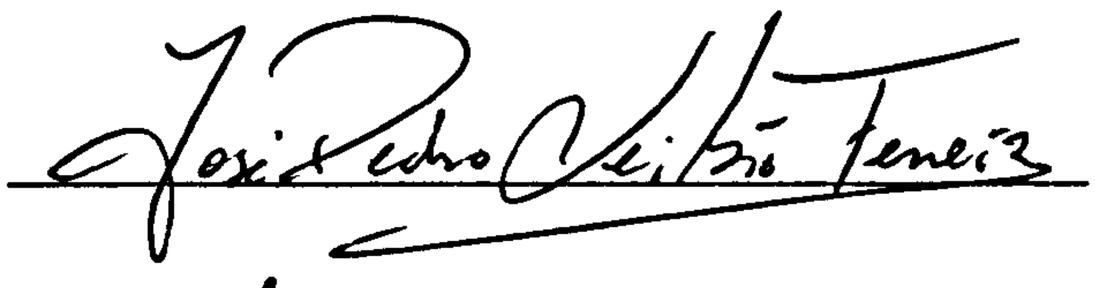
Signed: 

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

Prologue

As far as I can determine, the genesis of this research project was in 1998 with the exchange of a few e-mails with the late Dr. Trevor Williams about mutual research interests concerning the construction of the body in people with physical disabilities. Since then, many things changed from the original project and also in my own view of disability as a process and in the way I understand the main issues people with disabilities face in contemporary societies.

With Trevor's death some sociological aspect of disability hibernated in the back of my mind and some time later as I moved to Exeter University to work with Dr. Geoffrey Meek for my MPhil, the psychological components began to dominate my readings and thoughts and self-perceptions became my priority area of interest.

These last few years in the University of Bristol under the supervision of Professor Kenneth Fox gave me a complementary view about the development of self-perceptions, in particular its importance in the establishment of physical as well as mental well-being, a vital concept to improve personal quality of life both for individuals with and without disability.

In spite of the changes that occurred throughout the process, something remained very clear in my mind. The key to understanding the role of exercise and sport practice in the lives of people with physical disability could be found in the construction of their self-perceptions and this would reveal insight into their physical and psychological well-being.

CHAPTER I

INTRODUCTION

1.1. – OVER VIEW OF THE RESEARCH

Mental health and the promotion of psychological well-being is an emerging issue in contemporary societies. Today, some 450 million people worldwide suffer from a mental or behavioural disorder. However, only a small minority receive even the most basic treatment. The interest has increased substantially during the last decade due to the explosion in the costs involving therapy of mental illness. Mental and behavioural disorders are estimated to account for 12% of the global burden of disease, however mental health budgets of the majority of the countries constitute less then 1% of their total health expenses (W.H.O. 2001).

The 1995 Health Survey for England showed that twenty percent of women and fourteen percent of men might have, at some time in their lives, suffered mental illness. One in seven adults in the UK will suffer some form of psychiatric morbidity at some point in their lifespan. Even among children it has been estimated that up to twenty percent will suffer mild and seven to ten percent will suffer moderate to severe mental health problems that hinder normal development (Kurtz, 1992). A worsening trend is evidenced in particular groups such as socially disadvantaged populations (Rutter & Smith, 1995) and in groups with disability, with mental disorders representing four of the ten leading causes of disability worldwide (W.H.O. 2001).

Elements of appearance, structure, function and performance that differ widely from the norms are often perceived as undesirable by self and by others. Disability is considered as a multidimensional identity that is specific to culture and structure, that is socially constructed and mediated by time onset of disability, nature of impairment, socio-economic status, gender, ethnicity and a multitude of different roles, expectancies, aspirations, and perceptions that the individual incorporates into the self (Sherrill, 1997). This makes disability very

much susceptible to mental health disorders due to social exclusion, discrimination and prejudice that can affect the individual's personal identity.

The most prevalent psychiatric disorder, in the most developed countries, is depression, affecting five to ten percent of the population (Weismann & Klerman, 1992), and it is estimated that at least twenty percent of the population will be affected by depressive disorders at least once in their lives (Richards, Musser & Gershon, 1999). Cost for health services and for global economy are very high. The Department of Health (DoH, 1999) estimated that £7.5 billion pounds are spent each year in England on health services for mental disorders, so prevention of mental illness, particularly clinical depression, is a priority. This requires an increasing focus on the promotion of mental well-being and sport and exercise practices may have an important role as a preventive tool.

Research evidence has accumulated to support the effects of regular physical activity on aspects of mental health and illness, such as mood, depression, anxiety, stress, and Self-esteem (Biddle, Fox & Boutcher, 2000a), and medical authorities see it as an important element of healthy living (W.H.O. 1995), when struggling sedentary lifestyles carry at least twice the risk of serious disease and premature death (Berlin & Colditz, 1990).

On the other hand, health organisations now emphasise self-esteem as a central component of mental health (USDHHS, 1999). It is often regarded as the single most important contribution to psychological well-being as well as an important aspect of quality of life, being considered as a possible target for public health campaigns. Self-esteem is seen as providing a summary self-rating of how well the self is doing in life (Campbell, 1984). Low self-esteem is associated with poor health behaviours and mental disorders. Because of the global nature of self-esteem and its potential to be influenced by interactions in several life domains, researchers have consistently emphasised the need to assess several dimensions of the self, alongside self-esteem. The physical self has emerged as consistently important, demonstrating moderately strong correlations with Global Self-esteem throughout the lifespan (Fox & Corbin, 1989; Harter, 1985a). Additionally, physical self-perceptions have been directly related to indicators of

emotional adjustment, independent of self-esteem (Sonstroem & Potts, 1996). Physical Self-Worth (PSW), a dimension of the Physical Self-Perception Profile – PSPP (Fox & Corbin, 1989), that is the global summary of all the perceptions in the physical domain, acting as a mediator between physical self-perceptions and the Global Self-Esteem (GSE), carries important emotional adjustment qualities. "This suggests that PSW and related constructs should be regarded as key mental indicators in their own right, and should be assessed systematically in interventions" (Fox, 2000b, pp.99).

The study of self-perceptions in the physical domain is still an underdeveloped area of research in many countries, such as Portugal. Several studies have been published in the nineties involving physical activity and self-esteem, or specific dimensions of the physical self such as body image (Abrantes, 1998; Batista, 1995; Faustino, 1994; Ferreira, 1998; Vasconcelos, 1995) but none of them have explored the multidimensional aspects of the physical self. Recently, some authors used a translated version of the Physical Self-Perception Profile (Fonseca, Fox & Almeida, 1995) to assess Portuguese youth and young adults self-perceptions, initiating a multidimensional approach to the study of self-perceptions in the physical domain (Ferreira & Fox, 2002a, 2002b, 2003; Fonseca & Fox, 2002).

The study of self-perceptions is of even further interest when assessed in groups with special needs, particularly in individuals with physical disabilities, whose perceptions may be formulated in different ways on different criteria as a result of their disability (Ferreira & Meek, 2001).

The extent to which exercise and sport participation influences the development of self-perception and perceived competence in people with disabilities is also an unexplored area of research. There is a body of literature on disability and sport participation indicating that there is a great potential for involvement in sport to improve mental well-being in people with disabilities (Sherrill, 1997). Further research and well-controlled studies are required to support this presumption.

Several are in the literature of disability sport the studies that support the relationship between sport practice and higher levels of self-esteem and self-confidence. Support is also found for higher levels of motivation to perform skill tasks in the most different sports and leisure situations. Some of these studies analysed the psychological profile of wheelchair sport participants (Campbell, 1995; Campbell & Jones, 1994; Greenwood, 1990; Paulsen, 1990) using the Profile of Mood States (POMS). This research confirmed that the iceberg profile found in non-disabled athletes could also be seen in athletes with disability. However, the self-perceptions in the physical domains have not yet been fully studied in individuals with disabilities. This is surprising given the increase value attached to self-esteem and self-perception in educational, clinical and community health programmes as important indicators of mental well-being both in individuals with and with out disability.

The general aim of the present research was to develop a better understanding of the importance of exercise and sport participation in the development of self-perceptions in groups with physical disability. The study of disability sport participants, with different sport experiences and involved in different exercise and sport settings, can provide further insight into the use of exercise and sport activities in the development of a positive psychological well-being in individuals with physical disabilities.

The present thesis involves a sequence of three studies focusing on the construction of self-perceptions in different Portuguese population groups with and without disability using a Portuguese version of the Physical Self-Perception Profile – PSPP-P (Fonseca, Fox & Almeida, 1995). The use of this instrument in groups with physical disability requires previous statistical support for its validity and reliability in the Portuguese population that has not been totally achieved yet.

The purposes of the study one were threefold. First was to find statistical support for the validation of a translated version of the Physical Self-Perception Profile (PSPP) with a Portuguese youth population using a cross-cultural validation process, as well as to verify the hypothesised hierarchical relation between PSPP sub-domains and Global Self-Esteem (GSE) and the possibility to

use PSW as a predictive measure among these constructs. The second aim was to analyse hypothetical differences between groups with different levels of attention towards their physical self. Samples A and B were selected to provide a contrast between students whose attention to the physical aspects of themselves is high, including students involved in sport sciences and physical education programs, with higher mean values for all PSPP dimensions (Page et al., 1993; Sonstroem & Potts, 1996) and those where it is more likely to feature less prominently, non sport sciences university students. Finally, the third purpose was to test the goodness of fit for the original model proposed by Fox and Corbin (Fox & Corbin, 1989) to the Portuguese youth population.

The purposes of the second part of study one were twofold. First aim was to find further statistical support for the three-factor structure hypothesised for the Portuguese youth population in part one. SEM was used to test the goodness of fit of the model with a separate sample of Portuguese secondary school students as a follow-up. The second aim was to analyse the invariance of the structural parameters of the Physical Self-Perception Model proposed for the Portuguese population and test the equality of factor structures over samples (Portuguese university and college students, and Portuguese secondary school students) as well as over male and female subgroups for each sample using multigroup analysis.

The purposes of study two were threefold. The first aim was to test reliability and validity of the PSPP in Portuguese wheelchair basketball athletes to determine whether this instrument is sensitive enough to assess self-perceptions in groups with and without physical disabilities in sport settings. The second aim is to assess the hypothesised relationship between variables such as time of sport practice, frequency of doing sport and competitive level, and self-perceptions in the physical domain as well as the Global Self-Esteem for both basketball athletes with and without disability. The third aim is also to assess the hypothesised relationship between a specific group of variables such as lesion source, type of lesion, time onset of disability and functional classification, and self-perceptions in the physical domain as well as the Global Self-Esteem.

The purpose of study three was to understand the differences in the way individuals with physical disability perceive themselves in the physical domain, and identify the main differences and the main issues that might be important and relevant for the way these individuals perceive their body. Qualitative research interviews were used to understand this theme, to understand individual feelings; opinions and thoughts related with the development of physical self-perceptions sub-domains from fourteen-wheelchair basketball players. The purpose of this research study was to obtain content descriptions of the lived world of the interviewees with respect to their personal interpretations of the meaning of the described phenomena, to get to know things the way participants know them, from their personal experience, from their personal life story, using PSPP structure as a guideline during conversation. Participants were allowed to broke the line and introduce other topics that might be perceived as important and relevant to them.

CHAPTER II

LITERATURE REVIEW

The review of literature showed that there are two distinct bodies of literature on the physical self – the psychological and the sociological. The two rarely meet. However, they are both very important for the construction of the body and personal identity in particular for people with physical disabilities. Disability is seen as a multidimensional identity, socially constructed and influenced by a diversity of socio-cultural variables that each one incorporates into the self. During this chapter an effort will be made to present them clearly in the context of disability.

2.1. – THE SELF SYSTEM

The study of self-perceptions has been central to a wide range of theories in philosophy and in the social sciences (Bandura, 1977, 1978; Harter, 1978; Maslow, 1954; Rogers, 1951; Rosenberg, 1965). Our body is an important vehicle of relationship with the environment and with life. People present a tendency to perceive their bodies as if they were looking at a mirror and see their reflection in terms of social points of view and prejudice. Through embodiment, people explore, learn, present their selves and express their most intimate feelings and their sexuality (Fox, 1998).

Self-perceptions play an important role in establishing different psychological states and are responsible for the feelings each individual has about their capabilities, about their appearance, about the way people think others see them as effective members of society. These perceptions provide important information about identities, about their behavioural patterns, about one's own personality. Feelings such as embarrassment are seen as a threat to people's social identity as well as to their self-identity and self-confidence because they reveal a gap between how people would like to be and how they really are.

Much of what individuals do, whether conscious or not, is directed towards maximising our chances of feeling good about ourselves. Individuals learn to

avoid situations where they feel a lack confidence and which expose them to their inadequacies, and look forward for those which provide them with success.

2.1.1. – DEFINING THE SELF

It is not easy to find a single definition for the self. The terminology used to describe the self is diverse: self-concept, self-image, self-esteem, self-worth, self-confidence, self-evaluations, self-perceptions, self-identity, self-schemas are just a few examples of the terminology used in the description of the self. There is therefore, confusion in the use and meaning attached to different terms making analysis across studies difficult (Faria & Fontaine, 1990; Gallahue, 1989; Shavelson, Hubner & Stanton, 1976; Wylie, 1974, 1979; Zaichkowsky, Zaichkowsky & Martinek, 1980).

Global self-evaluations have typically been referred to as "self-esteem" (Rosenberg, 1979), "self-worth" (Harter, 1982, 1983, 1999), or "general self-concept" (Marsh, 1986a, 1987b). In each case, the focus is on the overall evaluation of one's worth or value as an individual. In the present thesis the terms "self-esteem" and "self-worth" will be used interchangeably because of their evaluative nature and that they are seen to be the self-constructs that are critical to both mental health and to the explanation of choice and persistence in behaviours. The term "Physical Self-Worth" will address a more specific construct involving general feelings of happiness, satisfaction and pride, respect and confidence in the physical self (Fox & Corbin, 1989).

Two distinct, but intimately intertwined, aspects of the self have been identified in the literature, the self as *subject* (the I-Self) and the self as *object* (the Me-Self). James (1892) introduced this distinction, defining the I-Self as the actor or knower, and the Me-Self as the object of one's knowledge, "an empirical aggregate of things objectively known". This distinction between the I-Self and the Me-Self has proved amazingly viable and appears as a recurrent theme in most theoretical treatments of the self (Harter, 1999). Over the decades, many researchers embellished upon James' formulation, using different terminologies but the essence of the distinction has been retained. Wylie (Wylie, 1979) summarised this distinction drawn by numerous theorists defining the I-Self as

the active observer whereas the Me-Self is the observed, i.e., the product of the observing process when attention is focus on the self.

Lewis (1991, 1994) adopted a new terminology for the I-Self; he calls it the "machinery of the self" which represents basic biological and perceptual processes that can initially be observed prior to 15-18 months of age. The Me-Self is described as the "idea of me", i.e., cognitive representations of the self that will only emerge after the second half of the second year of life.

Recent commentary (Fox, 2000b) suggests that the self is best described as a complex system of constructs, that may be organised by a *self director* which acts as an information processor and decision maker. Information relevant to the self is gathered and organised to form a self-description, termed *self-concept*, *identity*, or *set of identities* based on its abilities, qualities, traits and the roles it performs. The self-director invests time in directing choices and persistence in activities and use a range of self-promotions and self-presentation strategies to achieve the best results for the self. The individual balance of these choices and activities constitutes self-esteem or self-worth. Whereas self-concept is a self-description, self-esteem is a self-rating of how well the self is doing.

Burns (1986) tried to define the self as something based on what we are able to reach, in our thoughts on what we think others feel about us, and also on how we would like to be. This definition was supported and complemented by Vaz Serra (1988) when he suggests that self-concept is understood as a gradual phenomenon, caused by the interaction of several variables such as: the way others see you as an individual, the way you see yourself acting in specific situations, and the comparison between your behaviour and your peer behaviour, as well as the values transmitted by normative groups.

A great deal of research about the self was generated during the 1970s and 1980s showing that the self is a construct of central importance for human existence. This interest in the study of the self has been stimulated by the apparent dual role of self-perception in the explanation of human well-being and behaviour. According to Fox (2000b) self-esteem has been extensively used

as a critical indicator of life adjustment as well as an indicator of emotional stability and mental well-being (Fox, 2000b), (Sonstroem, 1997a). High self-esteem has been related to a range of positive social adjustments, such as independence, adaptability, resilience to stress (Wylie, 1989), to leadership, and to high levels of achievement in education and work (Fox, 2000b). High levels of self-esteem have also been linked with desirable psychological traits such us subjective well-being and happiness (Diener, 1984; Diener et al., 1999). Low self-esteem is closely related to mental illness and absence of mental well-being, and usually accompanies depression, trait anxiety, neuroses, suicidal ideation, sense of hopelessness, lack of assertiveness and low perceived personal control (Fox, 2000b).

On the other hand, several theories have focused on self-esteem as an initiator and mediator of human behaviour (Campbell, 1984). Many contemporary theories of human motivation feature elements of the self. High self-esteem is associated with healthy behaviours (particularly in adolescents) such as not smoking, lower suicide risk, greater involvement in exercise and sport, and healthier eating patterns (Torres & Fernandez, 1995).

Self-esteem can also be understood as the evaluation that the individual usually maintains regarding himself, the way he expresses approval or disapproval attitudes as well as the extension of individual's beliefs about his own competence, significance and respectability. It is also a personal judgement of the dignity, expressed in the individual's attitudes towards himself (Coopersmith, 1967). Self-esteem is usually understood as the evaluative component of self-conception, it is the degree that the individual has of favourable perception of its own self.

According to Gecas (1982), when we talk about self-concept, it is important to differentiate the contents that involve individual "identities" (as a student, as a sportsman/ sportswomen, among friends or among relatives) from the evaluative and emotional dimensions, which are usually called self-esteem. Self-concept is best seen as a self-description rather than a self-evaluation and refers to the multitude of attributes and roles through which individuals evaluate themselves to establish self-esteem judgements (Fox, 1998). The self-system

supports the individual's necessity to build a unique identity, which will dominate his/her life. The fact that most people like to feel good, as well as to avoid life situations that cause discomfort, trouble and bad feelings, makes people look for material, social, professional and even intellectual self-worth indicators which allow them to feel good about themselves and provide positive reinforcement in their lives.

It is important to emphasise the idea that self-concept and self-esteem are different, although related aspects, of self-perception (Greene & Reed, 1992; Harter, 1983, 1999). It is also possible to say that while self-concept involves the perceptions of the self, self-esteem goes beyond, translating the value that each one gives to those perceptions, i.e., their characteristics, their limitations and their potential attributes.

In summary, self-concept is hypothesised to be a multidimensional construct based on the perceptions that each one makes about themselves, in different domains (physical, social and moral). These perceptions are based on previous experiences as well as in the values and attitudes of significant individuals or groups. Self-esteem is the evaluative and emotional dimension of self-concept, it contains the positive or negative self-perceptions that people have about their behaviours, about their feelings and about the judgement that others make about those behaviours and feelings.

2.1.2. – SELF-ESTEEM FORMATION

Four principles are traditionally recognised as guiding self-esteem formation and development: i) reflected appraisal, ii) social comparison, iii) self-attribution and, iv) psychological centrality (Rosenberg & Kaplan, 1982).

Reflected appraisal holds that people are deeply influenced by the attitudes of others, especially significant others, towards the self and that in the course of time, people come to see themselves as they are viewed by others. Three other sub-principles can be classified under the reflected appraisal:

i) The principle of direct reflections – suggesting that self-esteem is largely influenced by the responses of others.

ii) The principle of the perceived self – related to one's perceptions of other's attitudes towards oneself which have to be incorporated.

iii) The principle of the generalised other – related with self-esteem that arises form broad social experience.

All three sub-principles are deeply concerned with the role of other people's attitudes in shaping a person's self-esteem and particularly pertinent to issues facing people with physical disability.

Social comparison is also central to self-esteem formation. Human beings learn about themselves by comparing themselves with others, and this process leads them to positive, neutral or negative self-evaluations (Rosenberg & Kaplan, 1982). Two types of social comparison may occur and operate in the formation of self-esteem. The first marks a person as superior or inferior to others, weaker or stronger, more good looking or uglier. These comparative labels are based on relative judgements, both about others and about the self. The second type of social comparison is normative, i.e., it refers primarily to conformity or to deviance. The issue under scrutiny is not whether one is better or worse but whether one is the same or different.

Self-attribution principle involves drawing evaluative conclusions about oneself, by observing one's own behaviour and outcomes. People may judge that they have done something brilliant and conclude that they are worthwhile because of it. These conclusions are reached not by consulting people's inner experiences, but by observing peoples behaviour and its outcome.

Psychological centrality is basic to the formation of self-esteem because it represents a person's self values. It represents the extent to which one values a certain quality and how much that quality influences one's level of self-esteem. What is critical in this principal is the individual's system of self-values. The evaluations that others have do not always have the same value because not all people are considered significantly important. All these principles are part of a complex set of processes in which feelings about self-identity are formed. However, self-identity is not constructed in the same way for all individuals. For example, self-esteem principles may function in a different ways for individuals

with and without disabilities (Sherrill, 1997) as discussed later in chapters five and six.

2.1.3. – SELF-CONCEPT MODELS AND MULTIDIMENSIONALITY

For many years, self-esteem was considered as a unidimensional construct, which could be evaluated through inventories that induced the answers of true and false, linking the self to a great variety of general and specific situations in daily life, such as school, sport, health, and friendship relations. According to some authors (Fox & Corbin, 1989; Sonstroem, 1997b), the largest progress accomplished in the theory of self-esteem was, the wide acceptance of its multidimensionality.

The emergence of this multidimensionality raised important questions about the structural organisation of the self in different dimensions. In 1976, Shavelson, Hubner, and Stanton presented a detailed model for the organisation of the multidimensionality of the self within a hierarchical structure (Fig.2.1).

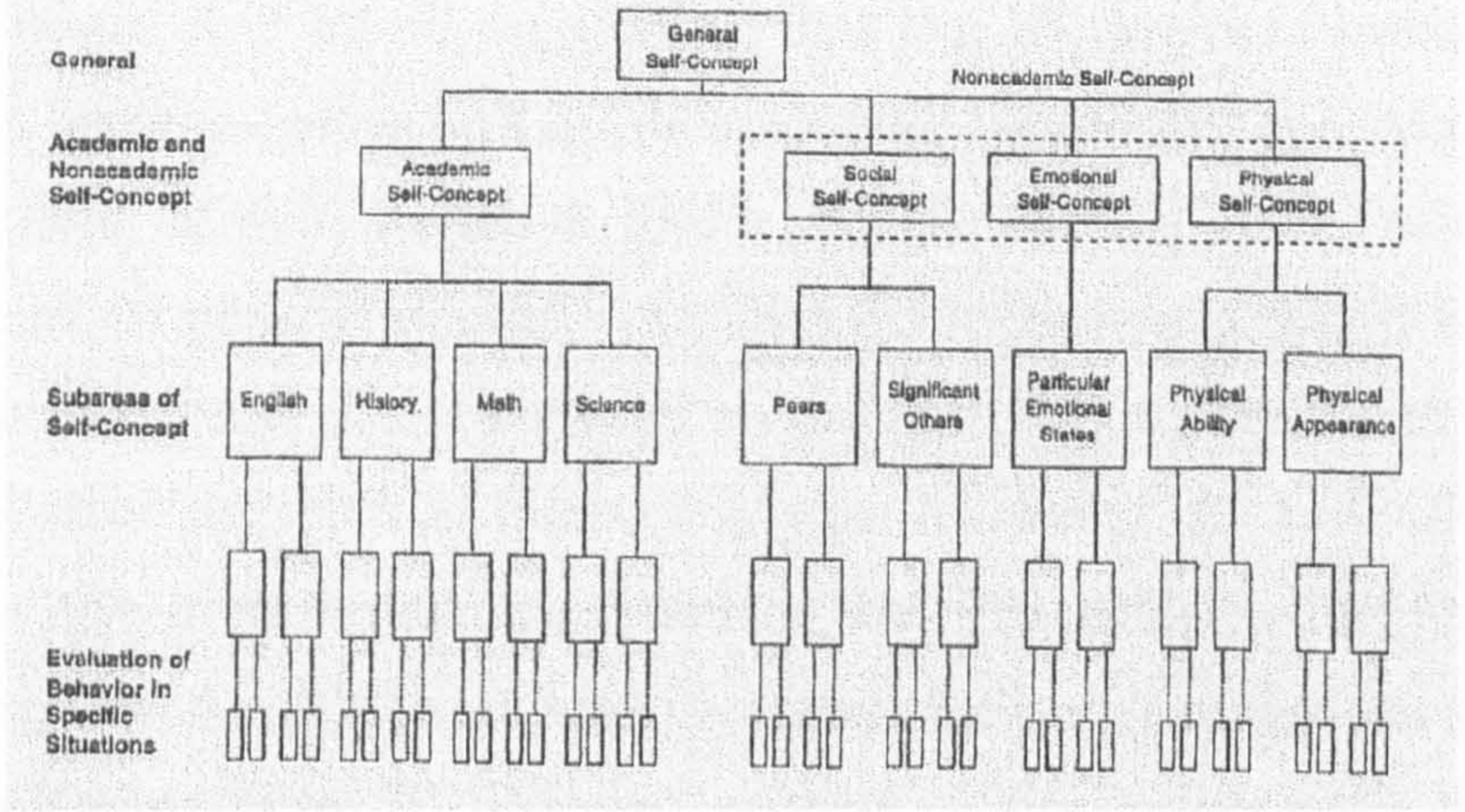

Figure 2.1 – A hierarchical model of self-concept.

From: R.J. Shavelson, J.J. Hubner and G.S. Stanton (1976). Self-concept: Validation of construct interpretations. *Review of Educational Research*, 46: 413.

The model's organisation is rootlike with the general self-concept at the top (apex), followed by academic and non-academic self-concepts in the following hierarchical level, organised in two different branches. Other division levels were hypothetically possible for each one of these specific selves, in a way that at

the base of the hierarchical model are very specific selves that are more task or situation specific, and more closely correlated with the individual's behaviour. This new model was attractive to researchers because it infers a path by which regular interaction with different aspects of life might modify the more enduring and global elements of self-regard, i.e., the interaction between different aspects of life might be able to modify the majority of global and durable elements of self-esteem through eventual changes in inferior levels of self-perception.

This theoretical model has achieved empirical support for its multidimensional structure and to a lesser extent its hierarchical organisation (Byrne, 1984; Marsh, 1997a; Shavelson & Bolus, 1982). For example, facets were related with the perceptions of competence in Mathematics, in English or in Sciences and were differentiated although correlated to each other and also correlated with the academic self-concept (Shavelson & Bolus, 1982). According to Marsh and colleagues (Marsh, et al., 1984b; Marsh & O'Neill, 1984a), a strong and progressive independence exists between these specific facets of self-concept and age, especially during the years of the secondary school level.

Further evidence was found suggesting that the hierarchical structure of the self-concept becomes more and more weak with increasing age (Marsh, Parker & Smith, 1983a; Marsh, Relich & Smith, 1983b; Marsh, et al., 1983c). In the particular case of preadolescents, a smaller distinction was found between the different specific facets of self-concept, meaning that it is possible to find a clear hierarchical structure even at these early ages. However, for individuals in late adolescence, the hierarchical organisation was less evident due to a growing independence of the different specific facets of self-concept as a result of different self-perceptions in different aspects of the individual's life (Harter, 1998; Harter, et al., 1997).

However, recently the hierarchical organisation of the self has been questioned. Criticism is based on the results obtained by Marsh and Yeung (1998b), and Kowalski and colleagues (2003) who tested the top-down, bottom-up, and horizontal effects of self-concept using Physical Self-Description Questionnaire (PSDQ) and the Physical Self-Perception Profile (PSPP). They found little support for either global self-concept factors influencing specific self-concept

factors (top-down effects) or specific self-concept factors influencing global self-concept (bottom-up) effects over a period of time. However, support was found for horizontal effects in which each self-concept factor at time 2 was a function of its time 1 status (Kowalski, et al., 2003). Further research is necessary to clarify the influences of time periods on the direction of causal flow.

2.1.4. – AGE AND GENDER EFFECTS IN THE SELF-SYSTEM

Special attention and interest has been placed over the stability and change in the self-concept during the potentially volatile period of adolescence (Dusek, & Flaherty, 1981; Wylie, 1979). However most of the research has focused on general and academic self-concept rather then in other particular facets such as the physical and the social self.

Age and gender differences have been reported, between samples, for all age groups on self-concept. Marsh and colleagues (Marsh, 1990; Marsh, et al., 1984b; Marsh, Craven & Debus, in press), proposed that self-concept of very young children is consistently high but that with increasing of life experience children learn their relative strengths and weaknesses so that mean levels of self-concept decline, individual self-concept becomes more differentiated, and self-concept becomes more highly correlated with external indicators of competence (e.g.: skills, accomplishments and significant others). However, the structure of self depends on both information available to an individual and the cognitive ability to process this information (Markus & Wurf, 1987).

According to Harter (Harter, 1983, 1985a, 1999), the self-concept becomes increasingly abstract with age, shifting from concrete descriptions of behaviour in early childhood, to trait-like psychological constructs (e.g., popular, smart, good looking) in middle childh ood, to more abstract constructs during adolescence, reflecting changes in the ability to process self-relevant information. This new ability moves self-perceptions into a new level of representation, adolescents become progressively able to differentiate their attitudes into multiple and role-related selves which allow them to express more specific self-evaluations of a multi-dimensional self.

Marsh (Marsh, 1989; Marsh & Craven, 1997b) found small but systematic age effects showing increases in self-concept during late adolescence and early adulthood based on responses to Global Self-Esteem scales, in large national representative samples. Evidence for decreases in self-concept during preadolescence were also found. A curvilinear age effect was hypothesised, however limited evidence for this assumption (inference) was found. Marsh also reported a reasonably consistent pattern of self-concepts declining from a young age at least through early adolescence, levelling out, and then increasing at least through early adulthood. For preadolescent responses, the decline was consistent across scales and was consistent for boys and girls. For adolescent responses, there was a U-shaped effect. Self-concept declined during preadolescence (grades 8 and 9), levelled out, and then increased. A similar effect during adolescent high school years, although not large, occurred for 8 of the 11 scales for boys and girls. For late adolescent and young adult responses, self-concept increased with age (Marsh, 1998a).

Early gender difference studies of self-concept reported few or no differences (Feingold, 1994; Maccoby & Jacklin, 1974; Wylie, 1979). However, Marsh (1989) demonstrated that these small differences in total reflect larger, counterbalancing gender differences in specific components of self-concept. Gender differences in specific scales tended to be consistent with traditional gender stereotypes: a) boys had higher self-concepts for physical ability, appearance, maths, emotional stability, problem solving and esteem; b) girls had higher self-concept for verbal/reading, honesty/ trustworthiness, and religion/ spiritual values.

For physical self-concept, gender differences were larger for physical ability than appearance for preadolescents, however the appearance differences were larger for adolescents and late-adolescents (Marsh, 1998a). Although there were declines in mean responses with age for both these scales during preadolescence, age effects during adolescence were much smaller, explaining less then 1% of the variance, involving linear and non-linear components. For late adolescents there were positive linear effects and age x gender interactions. For respondents older than 21 years substantial gender differences favouring boys became smaller with age. According to Marsh apparently gender

stereotypes have already affected self-concepts by preadolescence, and effects are relatively stable from preadolescence to at least early-adulthood. Further support for gender differences in self-concept was found by Crain (1996) suggesting that "differences in domain-specific self-concepts of boys and girls tend to run along gender-stereotypic lines" (p. 412).

There is also evidence that exercise has beneficial effect for male and female self-perceptions (Fox, 2000a). However, there may be greater potential for females then male as they consistently score lower initially on self-confidence in physical activity and also in Body Image, Physical Self-Worth and Global Self-Esteem (Lirgg, 1991).

In summary, age and gender differences exist towards the assessment of the different dimensions of the self. The differences are found since early childhood, but become more consistent in adolescents, late-adolescents and young adults as they increase with age. Gender differences were also found in self-perceptions in the physical domain. Boys tend to score higher then girls for all sub-domain scales. These differences in specific scales tend to be consistent with traditional gender stereotypes.

2.2. – THE PHYSICAL SELF

In the 1980s, the physical self emerged as a key component of identity and self-esteem, and occupied a unique position in the self-system because the body, through its appearance, attitudes and abilities, provides the substantive interface between the individual and the world. The recognition of self-esteem as a primary element of mental well-being indicates that understanding the functioning of a person will be difficult in isolation of the physical aspects of the self because it provides a key to understanding the constitution of our identities, the bases of our self-esteem, and many of our behaviour patterns (Fox, 1998). So it is not surprising that the physical self has consistently demonstrated moderately strong correlations with Global Self-Esteem across the lifespan (Fox, 2000c; Sonestroem, 1997; Sonstroem & Potts, 1996).

Sonstroem and Potts (1996) suggested that physical self-perceptions maybe so important that they have mental well-being properties in their own right. Aspects of the physical self produced associations with life adjustment as measured by mood, depression and reported physical and psychological health, when Global Self-Esteem and socially desirable responding were statistically controlled. This indicates that physical self constructs may be worthy of consideration as a legitimate and practically important outcome variables in exercise interventions as far as mental well-being is concerned.

The introduction of a hierarchical as well as multidimensional conception for the physical self, allowed a richer understanding of this construct as well as the relationship established with Global Self-Esteem. Fox and Corbin (1989) suggested a new hierarchical model for the physical self-suggesting a new dynamical approach to self-esteem (Fig.2.2).

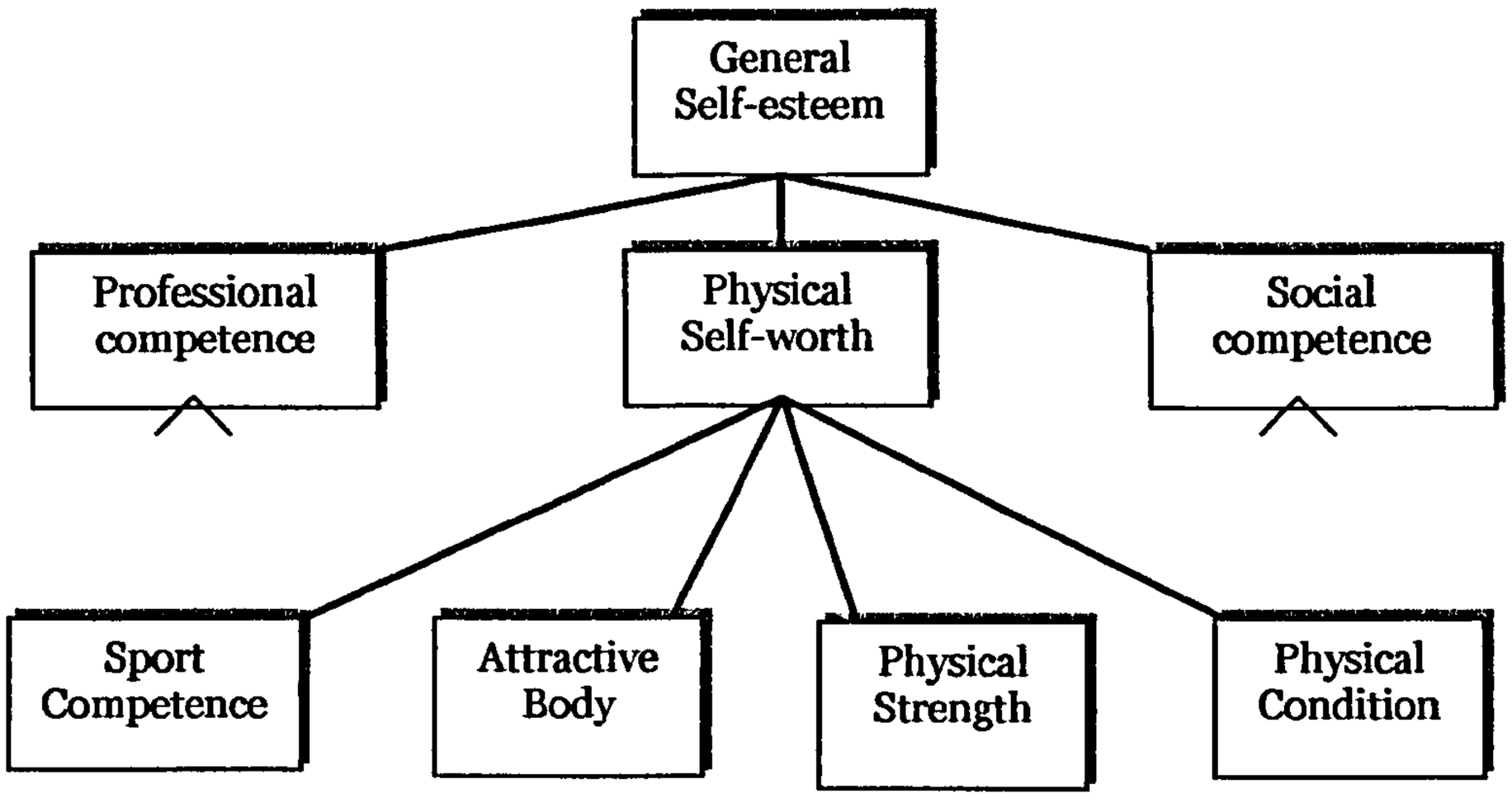

Figure 2.2 – Hierarchical model of self-esteem – the physical domain

From: K.R. Fox and C.B. Corbin (1989). The Physical Self-Perception Profile: Development and preliminary validation. *Journal of Sport and Exercise Psychology*, 11: 408-430.

The apex of the model represents Global Self-Esteem (GSE), the feelings everyone gets about his/her own value. The median level is occupied by diverse domains of competence, as proposed in Harter's model (Harter, 1982), and each domain is then composed of several more specific sub-domains. The apex of physical domain was labelled as Physical Self-Worth (PSW) and reflects the general feelings of happiness, satisfaction, pride respect, and confidence in the physical self. This construct is hypothesised to be a super-ordinate representation of combined physical sub-domains perceptions and was decomposed into four sub-domains: Physical Condition, Sport Competence, Physical Strength and Attractive Body. Physical Condition represents perceptions of one's level of Physical Condition, fitness and stamina, one's ability to maintain exercise, and one's confidence in the exercise, and fitness setting. Sport Competence includes perceptions of sport and athletic ability, ability to learn sport skills, and confidence in the sport environment. Physical Strength is related to perceived strength, muscle development, and confidence in situations requiring strength. Finally, Attractive Body corresponds to the perceived attractiveness of the body, to the ability to maintain an attractive body and the confidence in appearance.

The organisation of the model suggests that the apex level is the most general and stable, and that the lower level is very situation specific and changeable, suggesting that one could suppose that a high satisfaction in a given physical task reinforces the corresponding sub-domain, then enhances Physical Self-Worth, and then Global Self-Esteem. On the other hand, a sudden decrease of Global Self-Esteem will radiate over the domains, and in the particular case of the physical domain, will determine a decrease of its situation specific related sub-domains.

2.2.1. – ASSESSMENT OF PHYSICAL SELF

Recent advances in self-theory have been accompanied by the development of increasingly sophisticated instruments (Fox, 1998, 2000c) that showed excellent psychometric properties to assess elements of the physical self. This development was the outcome of the heavy reliance by exercise and sport psychologists on aspects of the physical self. The physical self was perceived as an important key to the understanding of the construction of identity and many behaviour patterns as well as in the promotion of physical and psychological well-being.

Fox and Corbin (1989) launched a series of studies directed to the identification of salient self-perception content in the physical domain and developed a profile to assess that content. The resulting instrumentation was the 30-item Physical Self-Perception Profile (Fox, 1990, Fox & Corbin, 1989). However, other multidimensional instruments such as the Physical Self-Efficacy Scale (Ryckman et al.,1982) and the Perceived Physical Competence Scale for Children (Lintunen, 1987) have also been developed using exploratory and confirmatory factor analysis to assess "physical performance capacity" and "perceived appearance". Finally, Marsh et al. (1994) developed the 70-item Physical Self-Description Questionnaire (PSDQ) to measure specific aspects of the physical self, along with general physical self-concept and general self-concept sub-scales, with good psychometric integrity and validity.

The profile approach taken with the Physical Self-Perception Profile (PSPP) of Fox and Corbin (1989) and by the Physical Self-Description Questionnaire (PSDQ) of Marsh and colleagues (1994) provided a rich multidimensional

assessment and a richer source of information. These self-perception profiles allowed an independent assessment of several elements of the self, and thus interrelationships among elements and their contribution to Global Self–Esteem could be investigated. Each of these instruments is multidimensional in design, and has subscales that allow assessment of perceptions at two levels of specificity. The PSDQ also includes a Global Self-Esteem scale to provide a third level. In the case of the PSPP the global measure of the self-esteem is provided by the recommended parallel administration of the Rosenberg Self-Esteem Scale (RSES) of Rosenberg (1965).

The recent diversity of studies published using the PSPP in different contexts and with different populations, as well as with different age groups, such as children and youth (Crocker, Eklund & Kowalski, 2000, Eklund, 1997 ; Hagger, Ashford & Stambulova, 1998; Raudsepp, Liblik & Hannus, 2002; Rose & Larkin, 2002; Welk, Corbin & Lewis, 1995; Whitehead, 1995), university and college students (Asci, Asci & Zorba, 1999; Hayes, Crocker & Kowalski, 1999; Kowalski, Crocker & Kowalski, 2001; Sonstroem & Potts, 1996), adults in their middle or later years (Alfermann & Stoll, 2000; Ninot, Fortes & Delignieres, in press; Sonstroem, Speliotis & Fava, 1992), as well as in special groups such as psychiatric population (Van de Vliet, et al. 2002a), and wheelchair sport athletes (Ferreira & Meek, 2001), supported the multidimensionality of the physical domain as well as in the majority of the cases the validity and reliability of the instrument.

In addition to profiles there was also a development of other instruments to measure singular aspects of the physical self such as aspects of body appearance, like body image and body satisfaction with the different parts, body acceptance, and more recently social physique anxiety related with displaying the body in public settings (Goffman, 1983). Additionally, situation specific measures of physical self-efficacy have been used with older populations that may have close correspondence with the aims of exercise interventions such increasing ability to climb stairs or walk for several miles per week (Fox, 2000b).

These developments have made it possible to locate measures of self-perception according to their specificity of content, ranging from behaviours-specific self-efficacy to Global Self-Esteem, at different levels. This offers a wide array of possible outcome measures for the researcher who wishes to document the effects of exercise interventions on self-perceptions. Although specific measures may not have the same influence on mental well-being that more global elements have, they may offer important clues as to the potential routes of self-perception change that interventions might initiate (Fox, 2000c).

Particular attention should be paid to groups with special needs. This includes individuals with mental disorders, individuals who are involved in rehabilitation from substance abuse, ill health or injury, as well as those who have physical disabilities and obesity. In these groups the assessment of physical self perceptions may be an important indicator about individual life adjustment and healthy emotional well-being, where it is likely to feature less prominently due to stigma, prejudice and social discrimination.

2.2.2. – EXERCISE EFFECTS ON SELF-ESTEEM AND PHYSICAL SELF

Health and medical professionals are slowly becoming interested in the potential of exercise to prevent and treat mental disorders such as depression and anxiety, as well as to improve the levels of well-being of the general public. In this context, self-esteem (Fox, 2000b; Sonstroem, 1997a), and physical self-perceptions (Fox, 1998; Sonstroem & Potts, 1996), are frequently offered as key mechanisms. In spite of this high potential different studies (Etnier et al., 1997; Fox, 2000b; Spence, & Poon, 1997), report only weak to moderate relationships between regular sport practise and self-esteem, and this relationship is inconsistent over the lifespan, probably influenced by population, environmental or individual characteristics. However, further support for the hypothesis that exercise helps people to see themselves more positively was recently provided in a meta-analysis of randomised control studies conducted by Fox (2000b). Findings revealed that 28 (78%) of the 36 studies analysed indicated positive changes in aspects of the physical self as well as in self-concept.

The application of Shavelson's model (Shavelson, Hubner & Stanton, 1976) to the physical self-concept domain had great influence on the development of other models such as the Exercise and Self-Esteem Model – EXSEM (Sonstroem & Morgan, 1989) particularly in the way this model tries to explain how exercise can affect self-concept and self-esteem. The EXSEM suggests that exercise behaviour can affect self-perceptions by changing particular tasks specific self-efficacies, within a training programme, which influence perceived physical competence and acceptance and, ultimately, more global physical self-concepts and self-esteem.

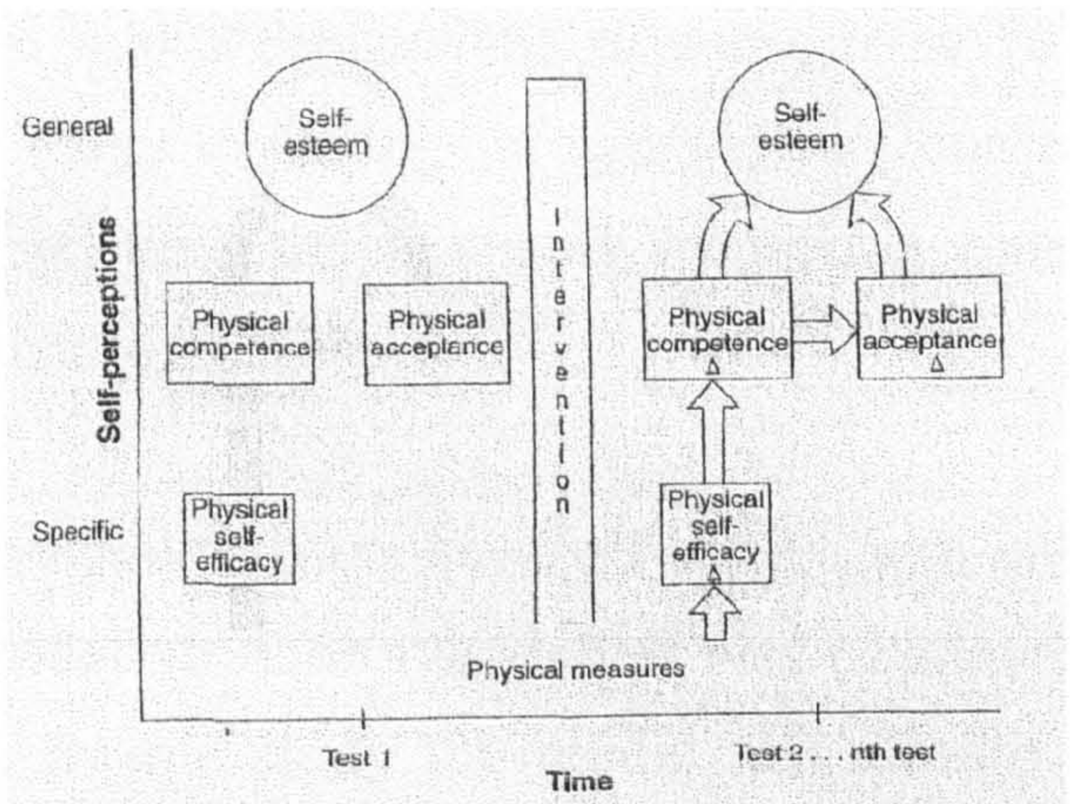

Figure 2.3 - Exercise and Self-Esteem Model - EXSEM (Sonstroem & Morgan, 1989)
From: R.J. Sonstroem (1989). Exercise and self-esteem: Rationale and model, *Medicine and Sciences in Sport and Exercise*, 21: 333.

It also shows the utility of simultaneous assessment of self-perceptions at three levels of specificity based on the idea that self-concept is best studied as a collection of self-perceptions, organised on hierarchical levels of specificity/generality (Fig. 2.3). These levels are self-efficacy statements - at the base -, estimates of perceived Physical Ability and Physical Acceptance - at the intermediate level - and Global Self-Esteem - at the highest level. At lower levels of generality, self-perceptions are more situation specific, therefore, it can develop grater association with behaviour and situation-specific criteria than self-esteem. These situation-specific perceptions are more susceptible to be influenced by environmental factors when compared with the relatively stable self-esteem.

The EXSEM proposes that self-efficacies of ones abilities to perform specific exercise or sport-training activities generalise to a broader perceived physical competence, i.e., the skill development hypothesis supports exercise affecting self-perceptions by increases in the physical fitness augmenting perceived physical competence, which similarly increases self-esteem (Marsh, 1986b). Self-efficacy was defined as the belief that one can perform successfully a given task (Sonstroem, et al., 1991), and is highly correlated to actual exercise competencies within a training programme and increase as performance at congruent training tasks increases (Atkins et al., 1984 and Ewart et al., 1983: c.f. Sonstroem, et al., 1991). On the other hand, competence and self-acceptance are regarded as the two major dimensions of self-esteem (Gecas, 1982; Harter, 1983). Competence refers to feelings of mastery and control over the self and environment, and self-acceptance means respecting oneself including ones admitted faults (Wylie, 1979).

The model was developed to trace how self-esteem was influenced by physical training and the model structure validation was obtained through structural modelling analyses. In one study the model was able to explain 29% of the Global Self-Esteem variance (Sonstroem, et al., 1991). The model's significance is enhanced by the absence of direct associations between self-efficacies and self-esteem.

In summary, the model presented by Sonstroem and Morgan (1989) showed that at lower levels, more specific self-evaluations, i.e., self-efficacies, are closely related to the behaviours in the environment and the more global elements of self-perceptions moderate the influence of behaviours and behavioural outcomes on self-esteem. This provides some interesting concepts to consider when investigating the possible influence of sport and exercise participation in individuals with physical disability.

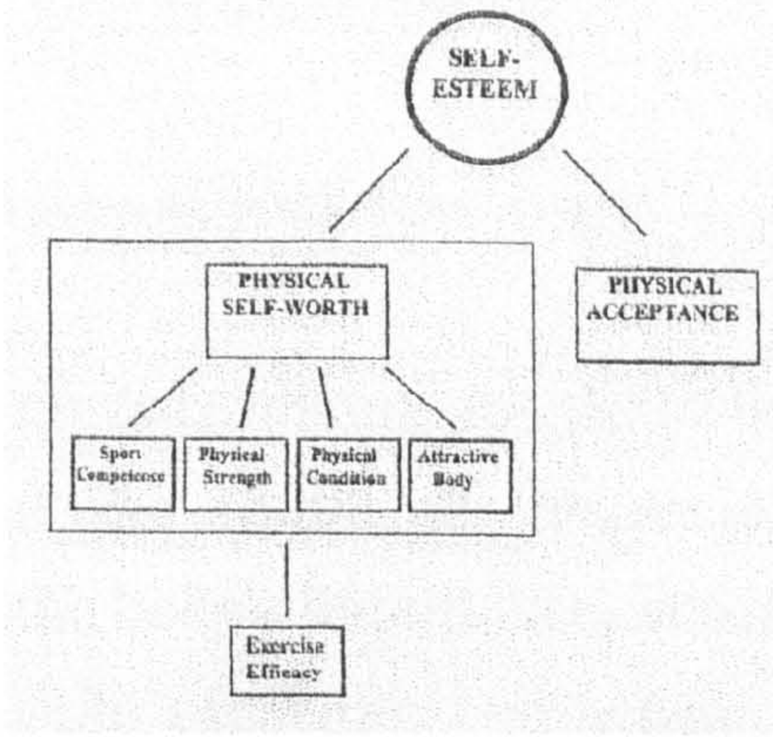

Figure 2.4 - A four-level modification of the EXSEM model using the Physical Self-Perception Profile (Sonstroem, Harlow & Josephs, 1994)

From: R.J. Sonstroem, L.L. Harlow and L. Josephs (1994). Exercise and Self-esteem: Validity of model expansion and exercise associations. *Journal of Sport and Exercise Psychology*, 16: 29-42.

The development of PSPP offered the opportunity to replace the unidimensional perceived Physical Competence level of the exercise and self-esteem model with a multidimensional physical self-concept profile. This expanded model with multiple physical self-components (Fig. 2.4) is seen as an extension of the original exercise and self-esteem model. In a study by Sonstroem, Harlow and Josephs (1994) the relationships in the model were supported through structural equation modelling. This provides an example of how improved instrumentation in combination can offer a more comprehensive and systematic framework for the study of self-perception change through exercise (Fox, 2000a). This use of multiple levels of self-perception measurement and analysis has much greater potential to assist in the detection of routes and mechanisms of change in the self-concept structure (Fox, 1998).

In summary, the development of measurement and models of the physical self-advance over the past twenty years has replaced the initial atheoretical studies using limited unidimensional instruments. A profile approach which is compatible with testable hierarchical models, assessing several levels of specificity in the self-system provide a strong basis for the study of the role of sport and exercise in the development and maintenance of self-esteem and aspects of mental well-being.

2.3. – BODY AND SOCIAL IDENTITY

2.3.1. – THE SOCIAL IMPORTANCE OF THE BODY

According to Merleau-Ponty (c.f. Shilling, 1993), the body can be conceptualised as occupying a place at the centre of the sociological imagination. The fundamental reasons for the body's importance, in sociological terms, are based on the assumptions that the capacities and senses, the experiences and the management of the bodies are not only central to the exercise of the human agency and constraint but also to the formation and maintenance of social systems. Our daily experiences of living are inseparable from our bodies, i.e., we all have bodies and we act with our bodies. Birth and death of the body represents the starting and arrival points of human existence and societies depend for their existence and survival on the reproduction of the existing bodies and also on the new ones that will be born (Shilling, 1993). To have a body is to be enabled, on the other hand it might also be constraining. For example, elderly and disabled people may feel more trapped by their bodies, than those who are young and able-bodied (Campling, 1981). This sociological perspective on the body therefore parallels that taken by Harter and Fox who take a psychological approach to physical self as the "public self".

In modern societies the body has become a major form of political and cultural activities, creating the concept of "somatic societies" (Turner, 1992, p.1), suggesting that the body carries out a fundamental role in the social organisation. Hancock and colleagues (Hancock et al., 2000, p.1) stated that "by the close of the twentieth century the body had become a key site of political, social, cultural and economic intervention in relations, for example, to medicine, disability, work, consumption, old age and ethics". However, sociologists' interest in the body cannot be solely explained by its emergence as a social problem.

Recently, the importance of the body in social terms has been modified as a result of the growing knowledge of the body as well as the increasing human capacity to control it. The progresses of medicine in specific areas such as the transplant of vital organs contributed to the idea of facing "the body as a machine" (Shilling, 1993, p.37). The new approach provided national

governments with the opportunities to link the idea of the body as an individual project that is amenable to social control. On the other hand, the body is seen as a complex machine whose performance can be improved and that can suffer temporary damage as well as periods for repair. The sport arena is one where the body is commonly treated as a machine. It is transformed and adjusted to competitive performance, using different training techniques, and has been dominated for those countries whose scientific knowledge is best applied to the "raw material" of athletes' bodies. In same cases it has been used as a symbol to promote political and ideological purpose (examples of GDR, URSS or China).

2.3.1.1. – Different views over the body

Generally there are two recognised perspectives on the body in the social sciences. These are the naturalistic (including the biological and socio-biological) and the social (including the social constructionist) perspectives (Nettleton, 1995). The contrast between the two perspectives provides a basis for pinpointing contemporary issues related with the body (Swain, French & Cameron, 2003).

Since the beginning of the eighteenth century, the naturalistic views of the body have exerted a considerable influence in the way people perceived the relationship between the body, self-identity and society. This naturalistic view addresses the body as a biological entity, irrespective of social and historical context, that determines what we are as individuals and our behaviour as social beings (Swain, French & Cameron, 2003). It also sustains that the capacities and the constraints of the human body define individuals and generate social, political and economic relationships that characterise national and international life patterns. The inequalities related with health, human rights or political power are not socially constructed, contingent or reversible, but are given by the determining power of the biological body.

For a long time the naturalistic approaches modelled popular contemporary conceptions of the body influenced the way sociologists conceptualised and analysed the human body. This influence has been basically a negative one, and there has been a tendency to react against the methods adopted by naturalistic views. However, the naturalistic view took seriously the idea that human bodies

form a basis for, and contributed towards, social relationships. The view that the biological body constitutes the base of the society and of the social inequalities was associated with specific social interests, particularly when illustrated the differences between gender.

According to Laqueur (1987, 1990), until the eighteenth century, the human body was perceived as an ungendered genetic body. The masculine body was the norm, but the feminine body had all the parts of the male body but they were organised in a different way and according to an inferior pattern (Duroche, 1990). Women were considered inferior to men, but their inferiority was not seen as a result of something specific, permanent or stable related with their bodies. The bodies, although important, were seen as receptors as much as generators of social meanings. This idea of "inferiority" could easily be linked to the disability arena as the "disabled body" is still today perceived as a "faulty" and "damaged body", source of social stigma and prejudice in opposition to the "normal" and "able-body" perceived as the norm.

However, a revolutionary change took place during the eighteenth century which substituted an "anatomy and psychology of incommensurability" for the existing model of social differences based on homologies between masculine and feminine reproductive systems (Duroche, 1990). Science began to establish categories between masculine and feminine, based on differences of biological nature. These changes were followed by the development of the notion of sexuality as a singular and human attribute, which gave individuals the chance to develop their own self-identity, which was firmly contrasted with the notion of opposite sex (Laqueur, 1990).

The geography of the bodies and the precise composition became increasingly important with the progress of science (Shilling, 1993). During the eighteenth century, a particular obsession with the feminine body was found, as a living, fleshy phenomenon, as a corps and as skeleton (Jordanova, 1989; Schiebinger, 1987). This obsession lead to the search for a biological base to proof the woman's social inferiority. The development of the natural and social sciences, in the eighteenth and nineteenth century was used to reinforce male superiority and the inevitability of female subordination in the public and private life

(Martin, 1989). The woman's body was faced as a second model that was just created to reproduction, to children's attendance and to create a natural morality through family life (Jordanova, 1989).

Summarising, we can say that naturalistic views of the genderised body are reductionist and based on unchangeable principles. The structure of the society is explained not only on the basis of the individuals within it, but on the intentions, the actions and potential of individuals as a result of some aspects of their physical or genetic constitution (Shilling, 1993). These arguments show the pseudo-relevance of these ideas to the experiences of a specific groups of individuals – athletes - who are trying to "improve" their Physical Condition and have a clear view that it is not of fixed nature, it is unstable and changeable.

An alternative vision to the naturalistic development of the body was first developed by Orbach (1988) and her attention focussed on how women's experiences of their bodies are distorted by dominant social forces. In spite of the body providing a base for the construction of patriarchal social relations, these relations are themselves seen as shaping the bodies of women. While the naturalistic visions present a tendency to face the body as a pre-social unchanging phenomenon, this new vision of the "distorted body" allows the body to be affected by social relations. This way the body can suffer pressures and shapes caused by the most different social forces. A good example is when women, especially mothers, do not recognise and assume their own needs giving priority to their children's and partners needs. Food is frequently a convenient substitute for their real emotional and intellectual needs so eating in a compulsive way should be faced as an expression of individual need and of personal frustrations (Orbach, 1988).

Recently a growing body of literature suggested another alternative approach to the body, the social perspective. This new perspective is based on the premise that the body as a receptor, rather then a generator, of social meanings (Shilling, 1993). The leading assumption that biology provides the dominant understanding of the body has collapsed and the meaning of the body has become a significant focus for linguistic, cultural and social analysis (Hancock et al., 2000).

In spite of a number of different positions within this perspective, the central notion is that the body is socially constructed or created and how we think about our bodies depends on the social, cultural and historical context (Swain, French & Cameron, 2003). Social constructionism considers that the body is somehow shaped and constrained, and even invented by society. Thus, social construction views are in opposition to the notion that the body can be analysed adequately as a biological phenomenon.

There are a variety of social constructionist views of the body that incorporate a number of distinct prepositions about the relationship between body and society. Social constructionist views differ according to how much of a social product the body is and whether it is even possible to speak of the body as a biological phenomenon (Vance, 1989: c.f. Shilling, 1993). The new views about the body as a social phenomenon were based in studies from Douglas (1970), Foucault (1980, 1982), Goffman (1983) and Turner (1992) that provided very interesting comparative examples based on the different views of the social construction. For example, while Foucault is usually categorised as a post-structuralist, concerning his attention in how bodies are controlled by discourses, Goffman is more a symbolic interactionist, more interested in the body as component of action.

A different view of the body as social constructed is the one developed by Douglas (1966: c.f. Shilling, 1993). The body is faced as a receptor of social meanings and a symbol of the society. The human body is the most readily available image of a social system (Douglas, 1970). Specific groups, present a tendency to adopt their own approaches to the body that corresponded to their location in social terms. It is the case of the artists, academics, and athletes that adopt different body postures shaped according to the social responsibilities in each group. According to Turner (1992) and Shilling (1993), Mary Douglas' anthropology is not an anthropology of the body, but an anthropology of the symbolism of risk and of social location and stratification.

On the other hand, Goffman (1963, 1983) analysed the position of the body in the social interaction through the study of the behaviour in public and private places, the representation of self and the management of stigma. The

management of the body becomes central to the maintenance of encounters, social roles and social relations and also mediates the relationship between an individuals' self-identity and their social identity. The body assumes the status of a resource, which can be managed in a variety of ways in order to construct a particular version of the self. In this way, Goffman had an important influence on more recent sociological studies about the relationship between the body and self-identity (Featherstone, 1982; Giddens, 1991).

Another important aspect of the analysis of the body as a social construction has to do with the "shared vocabularies of body idiom" (Goffman, 1983), i.e., the conventional forms of non-verbal language which guide people's perceptions of bodily appearances and performances providing a sense of the social constraints under which body management occurs. This new perspective is characterised by three fundamental aspects: i) the view of the body as a material property of individuals. In contrast with the naturalistic perspectives Goffman considers that individuals have the capacity to control and manage their body performances in order to facilitate and promote social interaction, ii) the meanings attributed to the body are determined "shared vocabularies of body idiom" which are not under individuals immediate control. The body idiom is as a conventional form of nonverbal communication that is considered by far the most important component of public behaviour. The "shared vocabularies of body idiom" provide a group of categories which label and grade hierarchically people according to type of information obtained, and iii) the body plays an important part in mediating the relationship between people's self-identity and their social identity. The social meanings that are attached to particular bodily form and performances tend to become internalised and exert a powerful influence on an individual's sense of self and feelings of inner worth.

The general approach of Goffman's work to the problem of the body is revealed through analyses of the procedures related with the maintenance of what he conceptualises as "interaction order". Interaction order is an autonomous sphere of social life that should not be seen as prior, fundamental or constitutive of the macroscopic phenomena (Goffman, 1983). The daily life consists of a group of routines established through work, in leisure and in the family life where individuals frequently initiate, enter, and leave encounters with other

individuals. In each step of those encounters the movements and appearance of the body send messages of intent between people. The encounters are also very important to social life, as there are occasions in which people are concerned to act out specific social roles. If people intend to act in a convincing way in these roles they need to observe a group of corporeal rules that govern and generate these private encounters.

2.3.2. – THE BODY AND THE SELF-IDENTITY

According to Goffman (1963) the "vocabulary of body idiom" is used by people to classify others and also used for the purpose of self-classification. People presented a tendency for perceived their bodies as if they were looking to a mirror, which gives them the reflection of their body in terms of society's view and prejudices. The analysis presented relatively by Goffman of the embarrassment and stigma is an example how the body mediates the relationship between self-identity and social identity. The embarrassment is usually caused when people display inconsistencies in their character or when individuals fail to maintain the smooth flow of interaction when the rules that regulate the encounters are broken (Schudson, 1984). The body is central to this failure of interaction communicating them to the "offended" as embarrassment, that is usually an highly uncomfortable situation with manifestations including blushing, tremoring and awkward gestures (Goffman, 1963, 1968; Kuzmics, 1991).

Embarrassment reflects a threat to social identity - the self-identity of a full and competent member of society as it reveals a gap between their virtual social identity and their actual social identity. The virtual identity of each individual is self-perception, while actual social identity is the way as others see the individual (Goffman, 1968). Our virtual social identity tends to be governed by a general desire to present ourselves as normal individuals. However, as time goes on, our actual social identity collides with our virtual social identity. The divergence between these identities is not sufficient to spoil our self-identity as social useful members. However, if our virtual social identity contains less features approved in social terms than first appearance suggested then our social identity is likely to suffer a dramatic change (Shilling, 1993).

2.3.2.1. – The body as a project

In western societies the body is usually seen as an entity that is in the process of becoming a project that can be worked and accomplished as part of an individual's self-identity. Recognising that the body has become a project entails accepting that its appearances, size and shape are potentially opened for reconstruction. This involves the practical recognition of the significance of bodies, both as personal resources and as social symbols, which give off messages about a person's self-identity (Shilling, 1993). In this context, the bodies become malleable entities that can be shaped and honed by the vigilance and hard work of their owners.

According to Shilling (1993) body might best be conceptualised as an unfinished biological and social phenomenon, which is transformed, within limits, as a result of its participation in society. People try to alter or improve their appearance, size and shape in line with their particular desires. Body projects are, however, social at the same time, as they are personal. Our perceptions and interpretations of the body are mediated through language and surrounding culture, and identity can no longer be derived from our traditional places within society, from class, family, gender or locality (Swain, French & Cameron, 2003).

The construction of healthy bodies is probably the most common example of the way the body became a project to be worked as part of the individual's self-identity. The cardiovascular diseases, obesity, diabetes, cancer and many other diseases and conditions are seen as avoidable through the ingestion of appropriate foods, avoiding or quitting smoking and with the accomplishment of appropriate amounts and type of exercise. The individuals' growing involvement in health programs could be seen in the context of the body as a project whose interiors and the exteriors can be controlled, fed and maintained as fully socially functioning. Other projects such as the plastic surgeries or bodybuilding are example of how modern individuals are increasing emphasis on their bodies and their capacity to shape them to influence body and self-identity. Investment in the body provides people with means of self-expression and a different way of potentially feeling good and increasing the control they have. However, there are several limitations to this view, the most important

results from the fact that individual's images about the desired body model may become a shield to perpetuate social inadequacies.

From this perspective, the body is no longer a simple personal project, the notion of "somatic society" (Turner, 1992, 1996) denoted a society within which "major political and personal problems are both problematised in the body and expressed through it" (p.1).

2.4. – THE SELF-SYSTEM AND DISABILITY

Disability is today seen as a multidimensional identity that is specific to culture and history, is socially constructed, and is mediated by time of onset, nature of the impairment, socioeconomic status, gender, ethnicity, and the multiple roles, expectancies, aspirations, and perceptions that each individual incorporates into the self (Sherrill, 1997). Self-concept is substancially influenced by frame of reference effects. Possibly, this multiplicity of interactions towards the self in individuals with disability may create alternative mechanisms as guiding the formation of the self.

The formation of the self may be critical particularly in groups with disability where spinal cord injury, polio, amputation or spina bifida plays an important role in individuals self-perceptions. Acquired disability and particularly traumatic spinal cord injury (SCI) "highlight the various contexts involving the nondisabled and disabled aspects of the total self" (Yoshida, 1993, p.231) comparing old-me with new-me through pendulum "processes" that may stongly influence and shape the self.

How favorably individuals perceive themselves may depend not only on their objective accomplishments but also on how this accomplishments compares with frames of reference established by cultural and societal expectations about the body. For example, reflected appraisal is usually experienced in contexts of ambiguous social attitudes and behaviors, sometimes totally contraditory, such as over-protection or prejudice, discrimination, stigma and stereotyping, leading to marginalisation. Social comparison may be much more complex in people with disabilities, because self-judgement may be based on a comparison with peers with and without disability, depending on the type of environment (segregated, partial, segregated or integrated). Self-attribution, i.e., cognitive appraisal of self on the basis of past success and failure experiences, may suffer from imbalance when failures exceded success and effort in the achieved outcomes. Finally, psychological centrality, which refers to the hierarchical organisation of many self-concept domains may be blocked by personal defense mechanisms (Sherrill, 1997), and relations between sub-dimensions may not have a similar flow to the one discribed for other groups without disability.

Three other key mechanisms are described in the literature as having an important influence on the development of self-esteem and more specific self-perceptions in people with disabilities (Sherrill, 1997): a) mastery challenge, b) growth through adversity, and c) defensiveness and denial.

The formation of self-esteem is usually associated in many studies (Craft & Hogan, 1985; Greenwood, 1990; Hedrick, 1985; Hopper, 1986) with the principle of self-attribution or self-efficacy, based on the assumption that motor skills improvement is the best approach to increasing self-esteem and enjoyment of physical activity. Sherrill and colleagues (1993) suggested a complementary self-concept development principle, mentioned as mastery challenge, based on the importance of strategies that empower individuals to master challenges that they perceive as hard, unpleasant, dangerous, or likely to result in failure, and that provide added support and empathy for persons who fail a lot or face unusual barriers or constraints. The notion of mastery challenge may be of considerable importance as a process to eucourage through interventions designed to develop self-esteem and well-being.

Another important effect associated with mastery challenge and frequently mentioned in rehabilitation and disability sport literature is the growth through adversity hypothesis (Green, 1984; Sherrill et al., 1990a; Sherrill, 1997). Adversity seems to promote growth in some persons with disabilities who draw on internal adaptative resourses and coping mechanisms to develop strong integrated identities. The strength gained through coping with disability may generalise to other areas of life, increasing internal locus of control and Self-confidence, and may help to explain why individuals with disabilities sometimes score higher on self-esteem domains than test manual norms and other groups without disability (Green, Pratt & Grigsby, 1984; Sherrill, 1997; Sherrill et al., 1990a). Exercise, sport participation and competition provide the ideal type of mastery challenge to help individuals with disabilities to go far beyond their limitations, to develop new abilities, and to perform at higher levels than those achieved before (Sherrill, 1997). The psychological benefits are evident, however, little is known about the circumstances that allow or encourage such positive growth under what might be considered as challenging conditions.

Educational research provides insight into another perhaps concept relevant to self-esteem formation in individuals with physical disability. Marsh refers to the "big fish little pond" effect – BFLPE (Marsh, 1987a; Marsh, 1991; Marsh, 1993a), whereby equally able students tend to have higher academic self-concept when attending schools where the average ability level of other students is low, and to have lower academic self-concepts when attending schools where the average ability level is high. This effect might help to explain the high scores of disability sport athletes on scales assessing self-esteem and aspects of the physical self.

Marsh and colleagues (1995) analysed a group of Australian elite athletes and found that elite athletes had substancially higher physical ability self-concepts than nonathletes but did not differ on physical appearance self-concepts. There were smaller differences favoring athletes on social scales, Global Self-Esteem, and total self-concept. Differences between elite athletes and nonathletes for physical ability self-concept were in the expected direction, but the differences were smaller than expected. This suggests the existence of a frame of reference effect in which elite athletes use other elite athletes to evaluate their physical ability Self-concepts as their actual abilities are greater than nonathletes. Other studies (Marsh & Peart, 1988a) demonstrated the practical implications of frame of reference effects on physical self-concept using a competitive-oriented aerobic intervention, where students compared their performances with whoever did best. This comparison led to a decline in physical self-concept despite increases in physical fitness. Further speculation was raised over the fact that in high competitive sport settings the frame of references established by other participants and the expectations of significant others may have as much influence on physical self-concept as the actual skill levels. For example, young athletes who are "superstars" in their local communities may experience a decline in physical self-concept when they join elite athletic team where everyone is a "star". This may be seen as a sport equivalent to the big-fish-little-poud effect.

In the case of athletes with disabilities, these type of effects may also be active in particular competitive sport settings. Athletes with disabilities may present different types of responses according to their expectations and the type of

comparison they establish with significant others. For example, disability athletes may present lower levels of self-esteem if they compare themselves with other elite athletes without disabilities with a higher average ability level, but they may also compare themselves with other disability athletes or nonathlete individuals without disabilities with a lower average ability level, and then present higher levels of self-esteem and physical self-concept.

Finally, and in contrast to the "positive growth through adversity" principle, some individuals with disability try to maintain their level of self-esteem through mechanisms such as defensiveness, denial, and rationalisation. Denial has been reported and explained as a response to spinal cord injury (SCI) in the initial stages of adjustment after lesion occurrence. However, today the existence of these stages is considered a myth (Trieschmann, 1988). According to the same author "denial seems to occur in a very small proportion of persons who became suddently disabled" (p.85) and is characterised by the manifested refusal to participate in any rehabilitation process involving any attempt to improve the physical as well as psychological condition because such activities are perceived as unnecessary.

2.4.1. – EXERCISE EFFECTS ON SELF-ESTEEM AND ON PSYCHOLOGICAL WELL-BEING OF PEOPLE WITH DISABILITIES

Since the 1980s, the health benefits associated with exercise became an important consideration for the increasing number of individuals with disabilities who became involved in sport practice (Compton, Eisenman & Henderson, 1989). The participation of individuals with disabilities in competitive sport as well as aerobic exercise was first promoted as a therapeutic intervention with the main purpose of helping these individuals to overcome psychological fears associated with their disability rather than enhance their psychological well-being (Monnazzi, 1982; Shivers & Fait, 1985). However, this question was recently brought up for further discussion suggesting that the physical world of sport and exercise should be seen as a particular revealing arena for examining the critical relationship between disability and the physical self (Sherrill, 1997). From a broader point of view, Williams (1994a) suggested that sport is, due to the small number of socialization experiences frequently related with negative social feed-backs as well as discriminatory and

segregational attitudes, a unique opportunity of interaction and construction of a particular and individual identity.

Self-esteem can be improved through exercise in individuals with disabilities (Campbell & Jones, 1994). A review of the effects of exercise on self-esteem of special groups (Leith, 1994) showed that only three of the 13 studies did not produce significant change ($p < 0.05$). A positive relationship was also found with mood states (Campbell & Jones, 1994; Greenwood, Dzewaltowski & French, 1990; Henschen, Horvat & French, 1984; Paulsen, French & Sherrill, 1990), and the physical self (Blinde & McClung, 1997). Individuals with higher values of physical self-perceptions tended to have more positive mood.

Studies involving the assessment of self-esteem in people with physical disability showed significant association between the level of participation in sports and Global Self-Esteem (Campbell & Jones, 1994; Crocker, 1993; Szyman, 1980). After a period of five months of practice in sport competition (Patrick, 1986) a significant ($p \leq 0.05$) increase was found in the self-esteem scores of novice wheelchair athletes when compared with those presented by wheelchair veteran athletes with three or more years of experience. These results confirmed those reported by Green, Pratt and Grigsby (1984) suggesting that self-esteem increases during the first years followed by a period of stability for four years after the occurrence of the lesion. In all studies those who presented lower initial levels of self-esteem gained the greatest improvements.

Sherrill and colleagues (1990a) made the first attempt to assess the self-concept of disabled youth athletes with physical disabilities using a standardised instrument, the Self-Concept Inventory (Harter, 1988). In spite of the gender and age limitations and an absence of comparable data it was suggested that youth disability athletes presented a similar general pattern of self-concept, to that presented by youth athletes without physical disabilities. Mean values fell within the standard deviation values reported for non-disabled youth athletes. Other studies showed that international disability athletes presented higher levels of self-esteem than national, regional and recreational groups (Campbell & Jones, 1994).

The participation of people with disability in sport and recreational activities offers opportunities for individuals to improve their self-perceptions in the physical as well as in the social domain (Blinde & McClung, 1997). However, the development of physical self-perceptions in disability sport groups or their role in social settings have not yet been fully studied. This is much needed, especially now that self-esteem and self-perception components have become increasingly valued in educational, clinical and community health programmes as important indicators of mental well-being (USDHHS, 1999) both in individuals with and without disability.

An alternative approach was recently introduced by a particular set of studies analysing more specific dimensions of the physical self, using qualitative methodologies and focusing their interests in shaping the self (Yoshida, 1993), physical and social self issues (Blinde & McClung, 1997), body management (Guthrie, 1999; Guthrie & Castelnuovo, 2001), body image (Taleporos & McCabe, 2001), identity issues (Sparkes & Smith, 2002), and the meaning of the body (Smith & Sparkes, 2002) in people with physical disabilities.

Yoshida (1993) analysed the processes that may shape the self in individuals with traumatic spinal cord injury (SCI). She found that the self could be influenced and shaped in different ways: i) loss of the non-disabled self, referring to the loss of core and peripheral aspects of the non-disabled self of the person prior to SCI, ii) sustaining the non-disabled self, referring to preservation of core and/or peripheral aspects of the person, iii) integration, viewed as a process of reclaiming lost aspects of the non-disabled self and a initial process of inclusion of the disabled self, iv) continuity, carrying through core and/or peripheral aspects of the non-disabled self in the life reconstruction process pos injury, and v) development of the total self, as a process including the ongoing maturation of the total self and the continuing process of inclusion of the disabled self. This process involves the non-disabled and the disabled selves of the person in everyday life.

Blinde and McClung (1997) examined the impact of recreational activities on perceptions of physical and social self of 23 individuals with physical impairment to explore qualitative aspects of the participation experience.

Results revealed several ways in which participation in individualised recreational programs enhanced perceptions of both the physical and social selves. Participation in recreational programs impacted four areas related to perceptions of the physical self, including: i) experiencing the body in new ways, ii) enhancing perceptions of physical attributes, iii) redefining physical capabilities and iv) increasing perceived confidence to pursue new physical activities.

Guthrie (Guthrie, 1999; Guthrie & Castelnuovo, 2001) described the way women with physical disabilities shaped their identities and managed their bodies through regular physical activity. In-depth interviews with 37 women with chronic illness and physical mobility disabilities found three different approaches: i) management by minimizing the significance of the body, ii) management by normalisation of the body, and iii) management by optimising mind-body functioning. A relationship between disability management through physical activity and empowerment, physical or psychological, was also found in this group.

Taleporos and McCabe (2001) analysed the impact of physical disability on the body esteem. That is a multidimensional construct comprised by two dimensions, affect and cognition, and found that physical disability can adversely impact feelings of physical and sexual attractiveness as well as strong negative feelings towards the body as a consequence of shame, discomfort, lack of acceptance of disability, a desire to hide disability as much as possible as well as unhappiness and stress towards the body.

Smith and Sparkes (2002) analysed the self-memories of 14 men who experienced spinal cord injury (SCI) through their involvement in playing rugby football union and who lived the experience of entering formal SCI rehabilitation. The participants were encouraged to tell their life stories, in their own way and using their own words, and analyses of the scripts revealed three types of narratives: chaos narrative, restitution narrative and quest narrative (Frank, 1995).

Chaos narrative is a story with an absence of narrative order and a lack of plot (Frank, 1995). No self finds purpose in chaos so chaos is an ineffective way to progress the self (Smith, 2004). For these men living in chaos, coupled with the strength of their athletic identities, negates the satisfaction that might be gained from participating in disability sport (Sparkes, 1998; Sparkes & Smith, 2002). Sport may impede rather then facilitate re-embodiment and so sport as a form of rehabilitation to promote enjoyment, a valued sense of self, and competence, might not be useful for all men (Smith, 2004). The restitution narrative has an affinity for the restored self and the entrenched self (Charmaz, 1987) that lock the individual into their past self-body relationships and ways of being in the world with the hope that they will return to this state (Smith, 2004). This narrative emphasises positive responses and outcomes and it is a story of coping with illness (or disability), rebuilding the body self, and remoralisation (Kleinman, 2000). The quest narrative is defined by the person's belief that something is to be gained from the experience (Frank, 1995). Quest stories are about being transformed, developing the self, and the teller given something by the experience of disability, that is then passed on to others in the telling (Smith, 2004). In individual's with SCI acquired through playing sport, all three narrative types can be told, alternatively and repeatedly (Smith, 2004) as no actual telling of disability experience conforms exclusively to any of the three narrative types (Frank, 1995).

2.5. – DIFFERENT PERSPECTIVES ABOUT DISABILITY AND THE BODY

Since the 1960s, the relationship between disability and the body, previously seen as non-controversial, has become highly contested. As a consequence of the traditional medical conception (medical or individual model) disability has been viewed as an outcome of physical and mental impairment and disabled people seen as people with "broken bodies" or "faulty minds". To the modern mind this vision was offensive to the sense of order, and represented a hint of chaos in a context dominated by clarity and perspective (Hughes, 2002).

Through the 1970s the concept of disability was gradually reformulated and began to be understood as a form of social oppression. This opposed the purely medical and welfare concern espoused by the medical perspective. This new concept, termed the "social model of disability" (Finkelstein, 1980; Oliver, 1990), raised among people with disabilities and their representative groups a self-organised resistance to relegation to residential institutions, to exclusion from the labour market as well as to the opportunity to earn a living, and to enforced poverty (Barton & Oliver, 1997; Campbell & Oliver, 1996). According to this new approach the term "disability" refers to a type of social oppression, and disablism enters the vocabulary along side with sexism, racism and other discriminatory practices (Thomas, 2002). Through the separation of physical or mental impairment from social processes of discrimination, exclusion and oppression, the social model of disability was able to make the case that disability was a public issue rather than a personal problem (Barnes, Mercer & Shakespeare, 1999).

Many studies developed during the 1980s and early 1990s, particularly in United States, involving sociological aspects of disability were based on the Parsons (1951: c.f. Oliver, 1996) perspective of the sickness-related behaviours associated with the disease. This Parsonian paradigm has been responsible for the establishment of two different and independent approaches that have influenced all subsequent analyses and for a long time the common sense concept of disability. The first approach highlights the relevance of the "sick role" in relation to disability and to its association with social deviations as well

as the notion of health as adaptation (Bury, 1982: c.f. Oliver, 1996). This approach suggests that sick individuals should adopt the "sick role" based on the assumption that illness and disease will influence physiological and psychological abilities that automatically relieve "sick" individuals of all normal expectations and responsibilities. These individuals are victims of their condition and are encouraged to view their present situation as something of abhorrent and undesirable. This creates the perception that the only form of improving their condition is to seek help from professional medical experts (Parsons, 1951: c.f. Oliver, 1996). Parsons model assumes that regardless of the nature of the conditions or the socio-economic factors involved, all individuals will behave the same way. This model pays little attention to subjective interpretations and it articulates only the views of the professional groups that are responsible for these individuals' recoveries, i.e., the medical profession.

One of the main criticisms of the Parsons´ model is that it does not consider the "sick role" variation (Twaddle, 1969: c.f. Oliver, 1996) nor the distinction between illness and disability (Gordon, 1966; Sieglar & Osmond, 1974: c.f. Oliver, 1996). Another important criticism is that the "sick role" is intended to be a temporary designation, presuming that it is equally applicable to permanently disabled individuals. Such an idea becomes contradictory if we consider that the "impaired role" is usually described as being ascribed to an individual whose condition is unlikely to change and that is unable to reach the first pre-requisite of the "sick role", i.e., to get well as soon as possible (Oliver, 1996).

Another important contribute to the sociological understanding of impairment is offered by the rehabilitation model proposed by Safilios-Rothschild (1970). This model suggests that once a person with impairment becomes aware of his/her condition he/she must accept it and learn how to live with it. That is reached through the maximisation of the existing abilities. The disabled individual is forced to reacquire their maximum functional status as soon as possible and keep it as close as possible too normal. Few expectations or social responsibilities are held regarding these individuals, they must co-operate with professionals and contribute for the innovation and improvement of new

rehabilitation methods (Oliver, 1996). In this model the responsibility rests totally on the shoulders of the impaired person.

Both of these theories can be criticised on at least three different levels (Oliver, 1996): (1) they are essentially determinist, the behaviour is just seen in a positive way if it commensurate professionals' perceptions of reality, (2) they ignore extraneous economic, political and social factors, and (3) undermine and deny subjective interpretations of impairment based on the perspective of the person concerned. Oliver considers that these theories are the product of the "psychological imagination" built with based on "non-disabled" assumptions of what is it like to experience disability. They follow the basic assumption that realisation of the impairment is presumed to involve some form of loss or "personal tragedy".

One of the factors that explain the ideological hegemony of the "personal tragedy theory" is its "professional expediency" both at an individual and a structural level (Oliver, 1996). According to this view, if individuals fail to achieve the pre-established goals of rehabilitation then this failure can be explained with reference to the inadequacy of the individual's impairment or the individual to adequately respond. The expert is always exonerated from any professional responsibility, whose integrity remains intact and the traditional wisdom and the values are not questioned and the existent social order remains unchallenged (Barnes, 1990). Basically, the main problem of the "personal tragedy theory" is that it fails to provide a universal explanation of the social meaning of the experience of disability.

Some of these ideas have had a long-term influence on the way people react to impairment and disability. These reactions are, in some ways, influenced by previous individual experiences and by the way each person defines impairment. For the most part, individuals with disabilities are viewed as recipients of a great variety of offensive and antagonic responses that included horror feelings, fear, anxiety, hostility, distrust, pity, over-protection and a large group of other patronising behaviours (Oliver, 1986, 1996). Labels such as disabled person, crippled, spastic, handicapped or retarded imply both a loss and a lack of worth. These labels were legitimised by the medical institutions

and their negative views about disability, neglecting other perspectives especially those of disabled people.

For disabled people the legacy of modernity was one of invalidation, originated in the process that excludes "impaired labour power" from the work force and in medical systems of classification in which "disability" came to mean a "faulty" or "abnormal" body. The ontological source of disability was impairment. For example, for people with mobility impairments, the medical model suggests that "their immobility is their own fault or the consequence of a deviant corporeality which requires medical care, or, failing that, the application of charitable works" (Imrie, 2000, p. 1652). However, a different perspective began to evolve in the "counter-culture" on the late 1960s and early 1970s where finally discourses of dependency, charity and medicalization (Manning & Oliver, 1985) came under challenge.

The individual model	*The social model*
personal tragedy theory	social oppression theory
personal problem	social problem
individual treatment	social action
medicalisation	self-help
professional dominance	individual and collective responsibility
expertise	experience
adjustment	affirmation
individual identity	collective identity
prejudice	discrimination
attitudes	behaviour
care	rights
control	choice
policy	politics
individual adaptation	social change

Figure 2.5 – Disability models (Olivier, 1996)

From: M. Olivier (1994). *Understanding disability: From theory to practice.* London: Macmillan Press Ltd.

In the 1970s, the Union of the Physically Impaired Against Segregation (UPIAS) advocated a struggle against disability discrimination on the grounds that disability was a social problem rather than the outcome of a "natural" (f)law. UPIAS (1976) redefined disability as "the disadvantage or restriction of activity caused by a contemporary social organisation which takes little or no account of people who have physical impairments and thus excludes them from participation in the mainstream of social activities" (p.14).

"Impairment" was cut loose from "disability". The biological and the social were separated into distinct domains, and disability became allocated to the latter. The ontological essence of disability was transformed from a physical or mental deficit into a matter of exclusion and discrimination (Hughes, 2002, p.64). The distinction between disability and impairment was the theoretical move that grounded the "social model of disability" (Oliver, 1990). In the authors own words "the idea of the individual and the social model was taken quite simply and explicitly from the distinction originally made between impairment and disability by the UPIAS in the Fundamental Principles Document (1976)" (Oliver, 1996) (p.30-31).

This approach involves a very different understanding of disability and entails an alternative set of assumptions, priorities and explanations and it was received much more enthusiastically by disabled people because it made an immediate connection to their own experiences.

The "social model of disability" transformed disability from an objective medical fact derived from the universal body of knowledge known as clinical pathology into an outcome of relations of power. Because of this separation between impairment and disability, the body was definitely removed from the definition of disability, while the dominance of the biomedical conception of disability was finally contested by a political discourse. Disabled people refused to accept the view that they are victims of defective bodies or that they need care, cure or charity.

However, more recently a new vision has emerged, considering impairment as social and disability embodied. The social model of disability might have to be complemented in the near future by a "sociology of impairment" to be understood in the context of the emergence of what Turner (1996, p.1) calls the "somatic society", "a society within which major political and personal problems are both problematised in the body and expressed through it".

2.5.1. – "DISABILITY BODY PROJECTS" AND THE CONSTRUCTION OF AN INDIVIDUAL DISABLED IDENTITY

The notion of the disabled body as a project has a long history, with the eugenics movement providing the philosophy and supposed "scientific" justification for extreme measures of "governance of the body". These eugenic practices involve measures to prevent the procreation of "degenerates", including euthanasia (Swain, French & Cameron, 2003). Today the main target for eugenic practices is the disabled body (Wolbring, 2001). The ideas of the eugenic movement persist today, for example, in the perceived undesirability or inappropriateness of the disabled people expressing themselves sexually.

Sexuality is socially conferred and constructed rather then biologically defined and disabled people face social, political and economic barriers in their functioning and identity as sexual beings (Lawrence, 1997; Shakespeare, 1996). Most of disabled women aspire to the establishment of sexual relationships, getting married and having children, however these women's opportunities to fulfil these aspirations are often not the same as those of their non-disabled contemporaries (Gillespie-Sells, Hill & Robbins 1998).

Another important issue concerned with the disabled body as a project is the subjugation of the disabled body to "corrective" medical intervention. Most of this "cosmetic surgery" is associated with professional intervention to "normalise" the disabled body. For many disabled people such interventions can be, at best, irrelevant and at worst abusive (Swain, French & Cameron, 2003). Most of "these processes may be performed under the guise of indispensable medical treatment, but are in fact often designed to normalise the less than perfect body – to make it more attractive and pleasing, to fit dominant conceptions of attractiveness and desirability" (Meekosha, 1998, p.177). The disabled body is still the site of oppression, abuse and prejudice.

To become disabled is assumed to be assigned with a new identity. To be born with impairment is to have this identity assigned from the moment of discovery and diagnosis. Both involve a social learning process in which the nuances and meanings of this identity have to be assimilated or addressed. Through interactions with "significant others" such as parents, siblings, peers and,

professionals (particularly in the case of people with disability), individuals learn the roles they are expected to perform both as children and as adults (Oliver & Barnes, 1998).

Perceptions of the self are derived through the continuous process of social interaction. People come to know who they are and how they are perceived as individuals through their interaction with other people. Individuals' sense of identity is constructed on the basis of other people's definitions (Oliver & Barnes, 1998). However, individuals with disability are also constrained by a nondisabled social world that circumscribes the identities of people with impairment and labels them "disabled".

In terms of developing perceptions of the self, individuals with disabilities are frequently viewed as passive recipients of societal belief systems regarding disability (Williams, 1994a, 1994b). Such perspective assumes that individuals with disabilities internalise negative attitudes about disability, behaving in a manner consistent with societal expectations, and develop negatives constructions of the self (Finkelstein & French, 1993). However, many are very active in the management of their own biographies, and in particular contexts they actively construct their own meanings and their sense of self as a person with disability in specific ways (Williams, 1994a). Thus, modifying these perceptions of the self can be seen as the major challenge given the pervasiveness of societal beliefs regarding disability (Blinde & McClung, 1997).

The social construction of disability in particular groups such as the wheelchair sport participants, is centred in the physical body and in its adaptation to a set of rules and of expectations of social nature. This is due to the fact that the body, in these individuals, represents an obvious source of disability, it is frequently devalued and presented as a limiting force in an individual's life (Mayer & Eisenberg, 1988). The existent relation between social and physical control may become important because to work towards the development of a "individual body project" requires a capacity to control the physical body according to the social rules and expectations. A good example of this capacity is the influence of the dominant culture (social pressure) that teaches women better than men that

their social position expectations is dependent on their capacity to distinguish their bodies and make them look different to what they really are (Stone, 1995).

Disability sport arena plays an important role on how individuals with disability acquire their sporting identities and develop "individual body projects" in context of sport and exercise. To become involved in regular sport and exercise has an important contribution for the construction of individuals sport identity (Williams, 1994a, 1994b). This identity is acquired when individuals become actively involved in a certain sport group (interacting with their team mates) and at the same time are also developing a global social conscience.

The interactionist approach to disability sport socialization is an alternative view that puts great emphasis on biography and the acquisition of selfhood. The biography is the individual's history, and the sociological task is to examine how the self is constituted, confirmed and transformed as the individual "interacts" with other individuals who also have their own biographies. Interactionism perceives individuals as active creators of their own notion of self both as persons and as athletes with disability that lived a direct experience in life. The identity of an athlete with disability is seen as a complex phenomenon that is built up over the life of the career, the career, its influences, and the content of the identity will fluctuate widely over that time (Williams, 1994a).

After finishing the review of the literature, additional information about the present research study is provided in the next paragraphs in order clarify the sequence of the events used for the present research study. Chapters three, four and five will present method and results from a sequence of three studies carried out to understand the way sport participants with physical disabilities perceive themselves in the physical domain, and the main key elements and mechanisms involved in this process.

Study one (part one and two) will not analyse any sample of disability athletes. The assessment of self-perception in the physical domain using the PSPP has an important limitation, the instrument is population specific as its psychometrics

have been exclusively established using a US young college student population (Fox, 1990). The use of PSPP with other populations, including Portuguese wheelchair Basketball players, requires a rigorous psychometric application in order to establish validity and reliability. However, the Portuguese version - the PSPPp - translated into the Portuguese language has not yet been totally validated for the Portuguese population. The main purpose of study one is to show the relevance of PSPP to the Portuguese population, using two samples of Portuguese students (university and secondary school students), analysing the validity and reliability of this Portuguese version before it could be used with Portuguese wheelchair sport athletes to assess their self-perceptions in the physical domain.

Study two will focus on the lack of research on the assessment of physical self-perceptions in groups with physical disability. This assessment will be based on the first attempt to use PSPPp with wheelchair sport participants. The major aim in this study will be to test the validity and reliability of the PSPPp as well as its sensitivity to assess physical self-perceptions in participants with physical disability involved in sport settings.

Finally, study three will provide further information about the key elements and the mechanisms involved in this process through the analysis of the lived experiences and personal life stories told by a group of wheelchair sport participants using qualitative research interview.

Figure 2.6 provides a flow chart of the mixed methods design used for the present research study. A dominant - less dominant design type with a sequential QUANT/ Qual approach across both paradigms was used both to data collection techniques and analyses (Tashakkori & Teddlie, 1998, p. 15).

Figure 2.6 - Flow chart of the mixed methods design for the present study

This particular type of design was used in the present study because one paradigm (QUANT) and its methods were dominant, while a smaller component of the overall study was drawn from an alternative design (Qual). This mixed method is usually characterised by the use of "an unstructured post-experimental interview (...) to detect awareness of the main hypotheses and to collect data regarding subjective reactions to the study that might have affected the results" (Tashakkori & Teddlie, 1998, pp. 45-46) providing additional information for a better understanding of the phenomenon in study. The standing point for the use of this particular methodology was based on the assumption that in social sciences the researcher should always look for the best of each method, independently of the philosophical debates and self-understanding of social sciences, in order to find the most adequate answer for his research questions and for his problem.

CHAPTER III

STUDY ONE - ASSESSMENT OF THE VALIDITY OF THE PHYSICAL SELF-PERCEPTION PROFILE IN PORTUGUESE STUDENTS

In spite of the worldwide use of Physical Self-Perception Profile (Fox & Corbin, 1989) for the assessment of physical self-perceptions in different groups such as children and youth (Crocker, Eklund & Kowalski, 2000; Eklund, Whitehead & Welk, 1997; Hagger, Ashford & Stambulova, 1998; Welk, 1995; Whitehead, 1995) and adults in their middle or later years (Sonstroem, Speliotis & Fava, 1992) with good results, no study has yet been published using this instrument in groups with disability. The main purpose of this dissertation is to assess wheelchair sport participants - wheelchair basketball players - self-perceptions in the physical domain using the PSPP, and obtain additional information about the way self-perceptions develop in groups with physical disability.

However, the study of self-perceptions in the physical domain is still an underdeveloped area of research in the Portuguese population. Recently, Fonseca, Fox and Almeida (Fonseca, Fox & Almeida, 1995) developed the first Portuguese version of the Physical Self-Perception Profile (PSPPp) but only limited research has been conducted using this instrument. Several exploratory studies (Fonseca & Fox, 2002; Fonseca, Lago & Mota, 1997; Oliveira & Fonseca, 2000b) were accomplished however the validation for the Portuguese population has not yet been achieved.

Further contribution is needed to test validity and reliability of PSPP-P with the Portuguese population before it could be used in the assessment of self-perceptions in more specific groups such as people with physical disability. The aim of study one is to give a contribution to the validation of the PSPP for the Portuguese youth population, using a two samples of Portuguese university and college students as well as secondary school students with similar characteristics to the ones used during the development and validation of the instrument in the USA population (Fox & Corbin, 1989).

3.1. - PART ONE - PORTUGUESE UNIVERSITY STUDENTS

Study one is based on three samples of the Portuguese student population (N=1052) from university and college, as well as from eight secondary schools in central Portugal. This study is organised in two different parts, part one and part two.

Part one presents method, results and discussion from validity of PSPP with Portuguese university and college students (n=572) as well as the results of the dimensionality, reliability and hierarchical structure analysis of the original four factors model suggested by Fox and Corbin (1989) for the PSPP. Results from further statistical analysis using confirmatory factor analysis (CFA), will also be presented including the assessment of the goodness of fit for this four factors model as well as for the three factors model previously suggested by Van de Vliet et al., (2002a) for the Flemish population and tested for the Portuguese youth population (Ferreira & Fox, 2002b, 2003; Fonseca & Fox, 2002). In this particular case two hypothetical models were tested, a three factor six items per factor model (model one) and a three factors four items per factor model (model two), based on the results of exploratory factor analysis (EFA) previously performed with these samples.

3.2. - METHOD

3.2.1. - PARTICIPANTS

The present study is based on two samples of the Portuguese students (N=572) from a university and college. Sample A subjects (n=223) were 80 females and 143 males attending a Sport Sciences and Physical Education degree course at the University of Coimbra. The mean age for females was 20.92 ± 2.67 years and for males was 21.80 ± 3.39 years. Sample B subjects (n=349) were 311 females and 38 males attending a Social Service and Welfare degree course at Instituto Superior Miguel Torga, also in Coimbra. The mean age for female was 21.78 ± 2.71 years and for males was 22.89 ± 2.66 years. The difference between the number of female and male students attending the Social Service and Welfare

degree course is explained by the type of programme, which attracts more female rather than male students.

3.2.2. - INSTRUMENTS AND MEASUREMENTS

The instruments used were administered as part of a test battery and included the Portuguese version of the Physical Self-Perception Profile (PSPPp), originally developed by Fox and Corbin (1989) and translated into Portuguese by Fonseca, Fox and Almeida (1995) using reverse translation method. Also, the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965) was administrated in line with previous work by Fox and Corbin (1989) during the development of the instrument. A short additional section involving demographic data was also used in the first part of the test battery.

Physical Self-Perception Profile (PSPP)

The PSPP (Fox & Corbin, 1989) is a multidimensional 30-item instrument organised into five subscales. Each subscale has six items displayed in a structured alternative format. Subjects are presented with two contrasting descriptions of people and they are asked to select the description most like themselves and afterwards the intensity of the agreement with that description, i.e., to choose whether this description is "sort of true to me" or "really true to me". This structured alternative format was developed by Harter (1985a) and has been shown to reduce socially desirable responding. Half of the items in the instrument are reversed so that the lowest-scoring descriptor is placed first (Fox, 1990, p.7). Item scores range from 1 to 4 with a possible sub-scale range of scores from 6 to 24.

The PSPP is organised to assess self-perceptions in four different sub-domains including Sport Competence (Sport), Physical Condition (Condition), Body Attractiveness (Body) and Physical Strength (Strength). A fifth subscale (PSW) represents a general or global measure of Physical Self-Worth. This subscale was designed to reflect a "gestalt" of the physical self along the same lines as Global Self-Esteem is depicted by Rosenberg (1979), and Global Self-Worth is conceptualised by Harter (1985b), and Marsh and Shavelson (1985).

Each one of the five dimensions represent a specific area of self-perception in the physical domain with Sport describing perceptions of sport and athletic ability, ability to learn sport skills, and confidence in the sport environment, Condition describing perceptions of level of Physical Condition, stamina and fitness, ability to maintain exercise, and confidence in the exercise and fitness setting, Body tapping perceived attractiveness of figure or physique, ability to maintain an Attractive Body and confidence in appearance, and Strength involving perceived strength, muscle development, and confidence in situations requiring strength. Finally, the super-ordinate scale of Physical Self-Worth measures general feelings of happiness, satisfaction, pride, respect, and confidence in the physical self.

Rosenberg Self-Esteem Scale (RSES)

The RSES was developed by Rosenberg (1965) as a result of the changes introduced in the Guttman´s original scale (1953) was used to access the global level of self-esteem. This instrument is a unidimensional 10-item scale displayed on a four-point Likert Scale to which subjects respond from strongly agree to strongly disagree. The global level of self-esteem is achieved through the sum of all scores providing a possible range of 10 to 40. The items in the scale assess pride and happiness in the self and its abilities and capacities.

3.2.3. - PROCEDURES

The procedures and the purpose of the study were explained to the participants who were selected through a convenience sampling procedure (Bryman, 2001). The sample was drawn from all Sport Sciences as well as Social Service and Welfare students from second, third and fourth years in both institutions attending classes during the second semester of 2000/01. Participants were tested in groups ranging in size from 30 to 70. Each received a test battery containing RSES and PSPP. Questionnaires were administered by the same research assistant using standardised instructions in quiet classroom conditions and who were available to answer any questions.

Difficulties with the structured-alternative format were already reported in children (Eiser, Eiser & Haversmans, 1995) and in adults (Marsh, 1994). Marsh

and Redmayne (1994) reported that around 7.3% of the sample was confused by the instructions and (Fox, 1998) reported that 5% of the children and adults did not follow the initial instructions correctly. In the present study particular attention was given to this issue. Initial instructions were given as well as encouraging participants to ask for one-to-one help in the first few minutes of administration. Percentage of spoiled returns was 2.3% with a total number of thirteen questionnaires being excluded.

Reliability for the PSPP and RSES was performed using a re-administration of the instruments to a sample of thirty-two students (16 female and 16 male), after a lapse period of 16 days. Criteria for the test-retest sample selection were performed on a lottery basis (draw system) among all the participants involved in the study.

3.2.4. - STATISTICAL ANALYSES

All statistical analyses were conducted separately by gender. It is not unusual in the measurement of self-referent psychological constructs to observe sensitivity to gender (Fox, 1990; Franzoi & Shields, 1984; Lirgg, 1991). Franzoi and Shields (1984) reported substantially different solutions for male and female in exploratory factor analysis of the Body Esteem Scale and Fox (Fox, 1990) also recommended gender analysis as well when using PSPP.

The full range of descriptive statistics was calculated for all domains and sub-domains. An alpha level of .05 was used for all statistical tests. Reliability for each sub-domain was measured using internal consistency coefficients such as Cronbach alpha and item total correlation values. Test-retest reliability was assessed using Pearson correlation coefficients for sub-domain scores from the first and the second administration.

Bivariate and partial correlations, including zero-order correlation coefficients, were also used to analyse the relationship between the different PSPP sub-domains as well as with Global Self-Esteem. Stepwise multiple regression was used to assess the level of explained variance in the PSW by the remaining PSPP sub-domain scores. Finally, differences between sub-domain mean groups were compared using independent T-test and analysis of variance (ANOVA). All

these statistical procedures were performed using Statistical Package for the Social Sciences for Windows version 11.0 Copyright © 2001 SPSS, Inc.

Factor analysis is "a generic term that we use to describe a number of methods designed to analyse the interrelationships within a set of variables or objects [resulting in] the construction of a new hypothetical variable (or objects), called factors, that are supposed to contain the essential information in a larger set of observed variables or objects, that reduces the overall complexity of the data by taking advantage of inherent interdependencies [and so] a small number of factors will usually account for approximately the same amount of information as do the much larger set of original observations" (Reymont& Jöreskog, 1993, p.71).

Two major dichotomies exist regarding factor analysis: exploratory and confirmatory. The determination as to which form to use in an analysis is made based on the purpose of the data analysis (Stapleton, 1997). Gorsuch (1983) stated that "confirmatory factor analysis is the more theoretically important, and should be the much more widely used of the two major facto analytic approaches while the exploratory methods should be reserved only for those areas that are truly exploratory, that is, areas where no prior analyses have been conducted" (p.134).

Exploratory factor analysis (EFA) was used to compare the items and the factor loadings found in the present study with those from the original analyses conducted by Fox and Corbin (1989) as no previous knowledge about the factor structure existed for the Portuguese samples, and check if the original factor structure could be replicated in the Portuguese university students samples (A and B).

3.2.4.1. - Exploratory factor analysis (EFA)

The first validation of PSPPp was undertaken using exploratory factor analysis. Principal component analysis method with Varimax rotation was used with a previous definition of the number of factors to extract - four, in order to establish the independence and integrity of the original four sub-domain scales

Sport, Condition, Body and Strength (Fox & Corbin, 1989). The PSW sub-scale was excluded from factor analysis as it was seen as a super-ordinate construct, resulting of weighted combinations of self-perceptions in the four sub-domains.

After analysing the different factorial solutions obtained, the final factorial structure was selected replicating the original criteria: i) factor loadings (item-factor correlation) below 0.4 were eliminated for the sake of clarity; ii) the total of variance explained for each factorial solution should be higher than 40% (Tinsley & Tinsley, 1987); iii) the theoretical meaning of each factor, i.e., the context of the items which load most strongly in each factor cannot be incompatible with the original theoretical solution; iv) each factor should present at least three items. These criteria are based in the parsimony concept proposed by Thurstone (1947) when interpreting the factorial structure. Factor analysis was carried out with a minimum of five subjects per item Gorsuch (1983) but in smaller sub-groups (example: gender analysis) this proportion was sometimes smaller, however factor analysis was basically used to understand the behaviour of the different variables and compare the solution found with the original model.

3.2.4.2. - Confirmatory factor analysis (CFA) using structural equation modelling (SEM)

Confirmatory factor analysis (CFA) is considered as a theory-testing model as opposed to a theory-generating method like exploratory factor analysis (EFA). In CFA the researcher begins with a hypothesis prior to the analysis. This model or hypothesis specifies which variables will be correlated with which factors and which factors are correlated. The hypothesis is always based on a strong theoretical and or empirical foundation (Stevens, 1996). This technique transform raw data into a correlation matrix and covariance matrix and describes them over a series of structural linear equations, which estimate the parameters for the predictor variables of the model as well as the goodness-of-fit indices.

One of the most popular confirmatory factor analyses methods, structural equation modelling (SEM), with a wide range of particular elements, became a

standard tool to many disciplines for investigating the plausibility of theoretical models that might explain the interrelations among a set of variables. A structural equation model represents a series of hypotheses about how the variables in the analysis are generated and related. The application of the SEM technique starts with the specification of a model to be estimated. The assessment of goodness-of-fit and the estimation of parameters of the hypothesised model are the primary goals.

The main question is how you assess the model fit.

The two most popular ways of evaluating model fit are the Chi-square (χ^2) goodness of fit statistics and the fit indices. The χ^2 goodness-of-fit statistics assesses the magnitude of the discrepancy between the sample and fitted covariance matrices, and is the product of the sample size minus one and the minimum fitting function (denoted as $T=(N-1)F_{min}$) (Hu & Bentler, 1999). The T statistics, usually called χ^2, can be derived from various estimation methods that vary in degrees of sensitivity to the distributional assumptions, and the one derived from maximum likelihood (ML) under the multivariate normal assumption is the most widely used summary statistic for assessing model fit (Gierl & Mulvenon, 1995).

The other popular way of evaluating model fit is the so-called fit indices that have been offered to supplement the χ^2 test. Fit indexes can be classified into absolute and incremental fit indices (Bollen, 1989; Gerbing & Anderson, 1993: c.f. Hu & Bentler, 1999; Marsh, Balla & McDonald, 1988b; Tanaka, 1993). An absolute fit index assesses how well an a priori model reproduces the sample data. Examples of absolute fit indices include the Goodness-of-Fit Index (GFI) and the Adjusted Goodness-of-Fit Index (AGFI) (Bentler, 1983) (Jöreskog & Sörbom, 1984; Tanaka & Huba, 1985), (Steiger, 1989) Gamma Hat, a rescaled version of Akaike's Information Criterion (Cudeck & Browne 1983), a cross validation index (Browne & Cudeck, 1989), McDonald's (1989) Centrality Index (Mc), Hoelter's (1983) Critical N (CN), a standardised version of Jöreskog and Sörbom's (1981) root mean square residual (Bentler, 1995b), and the root mean square error of approximation (RMSEA) (Steiger & Lind, 1980).

In contrast, the incremental fit index measures the proportionate improvement in fit by comparing a target model with a more restricted, nested baseline model. A null model in which all the observed variables are uncorrelated is the most typically used baseline model (Bentler & Bonett, 1980). Examples of incremental fit indexes include the Normed Fit Index (NFI) (Bentler & Bonett, 1980), a fit index by Bollen (BL86) (1986), the Tucker-Lewis Index (TLI) (Tucker & Lewis, 1973), another index developed by Bollen (BL89) (1989), Bentler's (Bentler, 1989, 1990), and McDonald's and Marsh's (1990) Relative Noncentrality Index (RNI), and Bentler's (1990) Comparative Fit Index (CFI).

However, two other issues are very relevant for the application of these fit indexes for model evaluation (Hu & Bentler, 1999). The first important issue is the determination of adequacy of fit indices under various data and model conditions often encountered in practise. These conditions include sensitivity of fit index to model misspecification, small sample bias, estimation method effect, effects of violation of normality and independence, and bias of fit indices resulting from model complexity.

The second important issue is the selection of the conventional cutoff criteria for given fit indices used to evaluate model fit. According to Hu and Bentler (1999) there is a permanent question about the adequacy of the conventional cutoff criteria due to the lack of empirical evidence. Marsh et al. (1995) suggested that although researchers typically interpret values greater than 0.90 as acceptable for incremental fit indices, no compelling rationale for this rule of thumb had been provided.

Other authors (Carlson & Mulaik, 1993; cf. Rigdon, 1996) suggested raising the rule of thumb minimum standard for CFI from 0.90 to 0.95 to reduce the number of severely misspecified models that are considered acceptable based on the 0.90 criterion. On the other hand, Marsh and Hau (1996) suggested that decision rules such as RMSEA< 0.50, NFI, NNFI, IFI, RNI, CFI or GFI > 0.90 and parsimony indexes > 0.80 may be useful in some solutions but they often lead to inappropriate decisions in other solutions, and should be considered only as rules of thumb.

A need is felt for the identification of adequate rules of thumb cutoff criteria for fit indices used to evaluate the goodness of fit of hypothesised models. Recently Hu and Bentler (1999) evaluated the sensitivity of various types of incremental fit indices and absolute fit indexes derived from maximum likelihood (ML), and suggested for all the recommended indexes, except Mc (a cutoff value of 0.90 is recommended for the ML-based Mc), a cutoff criterion greater than the conventional rule of thumb required for model evaluation or selection.

In spite of the difficulty to designate a specific cutoff value for each fit index because it does not work equally well with various conditions, these authors suggested the use of: i) a cutoff value close to 0.95 for the ML-based TLI, BL89, CFI, RNI and Gamma Hat indexes, ii) a cutoff value close to 0.90 for Mc index, iii) a cutoff value close to 0.08 for SRMR index, and iv) a cutoff value close to 0.06 for RMSEA. These cutoff index values seemed to result in lower type II error rates (Hu, 1999).

On the other hand, Hu and Bentler (1997) found that a designated cutoff value may not work equally well with various types of fit indexes, sample sizes, estimators, or distributions, so they suggested that combinational rules, using various combinations of cutoff values from selected ranges of cutoff values from the ML-based SRMR and a supplement fit index the ML-based TLI, BL89, RNI, CFI, Gamma Hat, Mc or RMSEA, would perform superior to a single index presentation strategy.

Hu and Bentler (1999) also suggested that combination rules with RMSEA > 0.50 (or 0.60) and SRMR > 0.60 (0.70, 0.80, 0.90, 0.10 or 0.11) resulted in acceptable type II error rates for simple and complex miss-specified models under robust and non-robust conditions. A combination rule with RMSEA > 0.60 (or 0.70) and SRMR > 0.90 (or 0.10) resulted in the least sum of type I and type II error rates.

However, when sample size is small (N ≤ 250), most of the combinational rules have a slight tendency to over-reject true-population models under non-robust conditions. Combinational rules with the ML-based TLI, Mc and RMSEA are less preferable when sample size is small (N ≤ 250).

Structural equation modelling (SEM) was used in the present study to test the goodness of the fit of the PSPP model (Fox, 1990) in a sample of Portuguese students using EQS - Structural Equation Program for Windows 5.7b Copyright © 1985-1998 by Peter M. Bentler. The knowledge of the original model came from the results obtained in American samples of students, during the development of the instrument as well as in other cross-cultural validity studies (Hayes, Crocker & Kowalski, 1999; Moreno, Balaguer & Atienza, 1997; Page et al., 1993). The analysis and comparison of the different parameters from our study was accomplished using data from those studies.

To run a SEM standard conditions were specified in conducting all covariance matrix analysis on the proposed four factors original model, both in confirmatory and in sequential multigroup analysis. Items were uniquely loaded on appropriate factors, the variance of each factor was fixed at one to define the scale of the latent factors, factors were allowed to correlate, and measurement errors were not allowed to correlate.

Considering the new alternatives previously suggested for the rules of thumb for the different fit indices (Hu & Bentler, 1999), considering the sample size for the present study, in particular the sample size when groups were analysed by gender ($n \leq 250$), the fit indices selected for the measurement of the goodness of the fit for the original PSPP model (Fox & Corbin, 1989) were the following:

Chi-square (χ^2) - the probability value for the χ^2 statistic, i.e., the probability of obtaining a χ^2 value as large or larger than the value actually obtained, given that the model is corrected. The null hypothesis is true when the model fit the data well and this probability should exceed a standard cut-off in the χ^2 distribution such as 0.05 or 0.01. Thus, in a very well fitting model, the probability will be large ($p > 0.05$ or 0.01). In a poorly fitting model, the probability will be below the standard cut-off value ($p < 0.05$ or 0.01), (Bentler, 1995b; Steiger, 1994; Tanaka, 1993).

Bentler-Bonett normed fit index (NFI) - is based on the fit function use as well as the null or baseline model of uncorrelated or independent variables. Values of NFI greater than .95 are desirable (Hu & Bentler, 1999).

Bentler-Bonett non-normed fit index (NNFI) - The non-normed fit index takes into account the degrees of freedom of the model. It can exceed the normed index in magnitude, and can be outside the 0-1 range (Bentler, 1995b; Bentler & Bonett, 1980) and values of NNFI greater than 0.95 are desirable (Hu & Bentler, 1999).

Comparative fit index (CFI) - Is a fit index that is not influenced by the sample size with a range of 0-1. CFI values closer to 1 express the best fit to the model (Bentler, 1988).

Goodness of the fit index (GFI) - This index accesses the total amount of variance and covariance explained by the model. GFI index values range from zero (weak fit) to one (perfect fit), however this value may also be negative (Bentler, 1995b).

Standardized root mean square residual (SRMR) - It is the mean for the normalized residuals, i.e., the adjustment for the effects of the sample size and scale differences (Jöreskog & Sorböm, 1988b; Sorböm, 1982). Theoretically, all the residuals should be as close as possible to zero, however Hu and Bentler (1999) suggests a cutoff value close to 0.80.

3.2.5. – SCALES RELIABILITY

PSPP subscales were originally reported to be sensitive to a wide range of individual differences and were not susceptible to ceiling or bottoming effects (Fox, & Corbin, 1989). Reliability for each sub-scale was measured using internal consistency coefficients such as Cronbach Alpha and item total correlation values. Nunnally (1978) suggests values higher than 0.70 for scale internal consistency coefficient values if this scales want to be kept for further analysis. On the other hand, Highlen and Bennet, (1983), Weiss and Friedrichs (1986), Westre and Weiss (1991), and Leitão (1999) retained lower alpha values of .60 for subsequent analysis. In Fox's study internal consistency coefficients

for males and females ranged from 0.81 to 0.92 and test-retest coefficients ranged from r= 0.74 to 0.92 over a 16-day period and between r= 0.81 and 0.88 over a 23-day period.

RSES has been validated in many different studies (Hagborg, 1993; Rosenberg, 1979; Silber, 1965) and has also been used with the Portuguese population in several studies, (Abrantes, 1991; Batista, 1995). Silber and Tippett (1965) reported a test-retest reliability value of 0.85, however Batista (1995) using this instrument in the Portuguese youth population (11-17 yrs.) reported a good reliability with mean r= 0.74.

3.3. – RESULTS

3.3.1. - DESCRIPTIVES

Descriptive analysis from age group variable samples A and B show that 250 of the initial 391 Portuguese female university students (63.9%) belong to the juvenile adulticia age group, i.e., their chronological age is between 21 and 40 years of age while the other 141 female students (36.1%) belong to the adolescence age group, i.e., their chronological age is between 8 and 20 years of age (Haywood, 1993). Data from the male sub-sample show that 117 of the initial 181 Portuguese male university students (64.6%) belong to the juvenile adulticia age group while the other 64 male students (35.4%) belong to the adolescence age group.

Tables 3.1 and 3.2 provide a comparison of PSPP subscale mean scores and standard deviations values for female and male subjects from samples A and B used in this study as well as from other studies using the same instrument (Fox, 1990; Hayes, Crocker & Kowalski, 1999; Page et al., 1993). Fox's scores are an amalgamation of three samples of broad range of US university students with a mean age across of 19.7 years. The means from the Page et al., study are from first year UK students (mean age was 19.87±3.19 for females and 19.42±2.41 for males) attending a sport and recreation degree course.

Table 3.1 – Mean scores and standard deviations from PSPP subscales and GSE – a female cross-cultural comparison

Sub-scales					**Fox, 1990**		**Page et al., 1993**		**Hayes et al., 1999**	
	Sample A		*Sample B*							
<u>Female</u>	n=80		n=311		n=431		n=52		n=94	
	M	SD	M	SD	M	SD	M	SD	M	SD
SPORT	16.00	3.17	13.25	3.24	14.16	4.30	16.50	3.68	16.30	3.53
CONDITION	16.95	3.02	13.24	3.18	14.40	4.10	18.01	3.37	16.81	3.69
BODY	15.09	3.64	13.75	3.74	13.33	4.26	14.71	3.52	13.27	4.16
STRENGTH	15.75	3.32	13.28	3.01	14.66	3.70	16.02	3.48	15.30	3.83
PSW	16.58	3.41	13.89	3.74	14.20	3.80	15.85	3.77	15.33	3.89
GSE	31.13	4.25	30.23	3.97	-	-	-	-	-	-

The means from Hayes, Crocker and Kowalski study are from a sample of Canadian university students from colleges of education, arts and sciences, and physical education students (mean age was 19.46±1.51 for females and 20.03±1.99 for males).

The patterns of mean score values presented in samples A (sport sciences students) and B (social service and welfare students) was similar to those found in previous studies, particularly in groups with similar characteristics, i.e., those students whose attention to their physical self is high (sport and PE students) presented higher mean score values for all PSPP sub-domains then those where it is more likely to feature less prominently (non sport-related degrees students).

Table 3.2 – Mean scores and standard deviations from PSPP subscales and – a male cross-cultural comparison

Sub-scales					**Fox, 1990**		**Page et al., 1993**		**Hayes et al., 1999**	
	Sample A		*Sample B*							
Male	n=143		n=38		n=383		n=80		n=89	
	M	SD	M	SD	M	SD	M	SD	M	SD
SPORT	17.09	3.05	14.76	3.98	17.06	3.39	18.30	2.59	18.66	2.33
CONDITION	17.64	3.42	14.68	3.28	16.63	3.93	14.71	3.52	18.34	3.55
BODY	16.60	3.45	14.16	3.66	15.23	3.56	16.17	2.77	16.39	3.30
STRENGTH	15.79	3.32	14.47	3.05	15.66	3.50	15.26	3.12	16.46	3.61
PSW	17.66	3.59	15.03	3.77	17.05	3.55	17.51	2.92	18.46	2.76
GSE	31.66	4.94	30.84	4.57	-	-	-	-	-	-

Portuguese female sport sciences students (sample A) showed lower mean score values for Sport, Condition and Strength sub-domains but higher mean score values on Body Attractiveness and Physical Self-Worth, when compared with their English female sport science colleges (Page et al., sample). Portuguese male sport science students showed higher mean score values for all the PSPP sub-domains, with the exception of Sport Competence, when compared with their English sport science colleges (Page et al., sample). Sample B Portuguese female students demonstrated similar physical self-perception levels to the female sample presented in Fox's research involving US non-sport sciences

students. The Portuguese male social and welfare students presented lower mean score values for all the PSPP sub-domains, when compared with Fox's sample, although sample size is small. Table 3.3 presents independent T-test results from Portuguese university student's gender analysis.

Table 3.3 – Significant T-test results for PSPPp sub-scales and GSE for Portuguese university students

		Levene´s Test		T-test		
		F	Sig.	t	df	Sig.
Gender	Sport	.007	.935	-9.12	570	.000**
	Cond	.882	.348	-9.46	570	.000**
	Body	2.32	.128	-6.27	570	.000**
	Strength	1.20	.275	-5.89	570	.000**
	PSW	.283	.595	-7.76	570	.000**
	GSE	4.97	.026	-2.59	299.33	.010**

** significant at .01 * significant at .05

Significant statistical differences were found between Portuguese female and male university students for all PSPP sub-scales as well as for GSE ($p \leq .01$). Portuguese female university students presented lower mean score values for all PSPP sub-domain scales when compared with Portuguese male university students as well as for Global Self-esteem. Table 3.4 and 3.5 presents independent T-test results for female and male sport sciences (sample A) and social and welfare (sample B) university students.

Table 3.4 – Significant T-test results for PSPPp sub-scales and GSE for female university students samples A versus B

		Levene´s Test		T-test		
		F	Sig.	t	df	Sig.
Group	Sport	.017	.897	6.81	389	.000**
	Cond	.273	.602	9.68	127.85	.000**
	Body	.843	.359	2.88	389	.004**
	Strength	1.26	.262	6.40	389	.000**
	PSW	2.47	.117	5.82	389	.000**
	GSE	.545	.461	1.76	389	.079

** significant at .01 * significant at .05

Further analysis by group and gender showed that female students sample A (sport sciences students) and B (social and welfare students) presented significant statistical differences for all PSPP sub-domains (Sport, Condition, Body and PSW $p \leq 0.000$, Body $p \leq 0.01$) but not to GSE ($p = 0.079$).

Table 3.5 – Significant T-test results for PSPPp sub-scales and GSE for male university students samples A versus B

		Levene´s Test				T-test
		F	Sig.	t	df	Sig.
Group	Sport	5.59	.019	3.36	49.19	.002**
	Cond	.283	.595	4.62	179	.000**
	Body	.694	.406	4.00	179	.000**
	Strength	.294	.589	2.19	179	.030*
	PSW	.829	.364	3.93	179	.000**
	GSE	.059	.808	.926	179	.356

** significant at .01 * significant at .05

Male students samples A (sport sciences students) and B (social and welfare students) also presented significant statistical differences for all PSPP sub-domains (Sport $p < 0.01$,Condition, Body and PSW $p \leq 0.000$, and Strength $p < 0.05$) but neither to GSE ($p = 0.356$). Sport sciences students, both female and male groups, scored higher mean score values in all PSPP sub-domains and in GSE when compared with their social and welfare colleagues.

3.3.2. – INITIAL DIMENSIONALITY

The results of the preliminary EFA from males and females were performed using data from the Portuguese university students combined from both sample A and B, and are presented in tables 3.6 and 3.7. This procedure is justified by the sample size in order to accomplish an absolute minimum of five participants per variable and no fewer than 100 individuals *per* analysis (Gorsuch, 1983). The four-factor original solution explained a total of 47.9% of the variance for female and 53.2% of the variance for male students among the sub-scale items. For both gender analyses, the majority of items loaded on their intended factors.

Table 3.6 – Principal components factor loadings for PSPP items (female university sample, n=391)

Sub-scale	Item N°	F1 loadings	F2 loadings	F3 loadings	F4 loadings
CONDITION	**2**	.47			
	7	.53			
	12	.43			
	17				.61
	22	.62			
	27	.70			
BODY	**3**		.72		
	8		.70		
	13		.73		
	18		[.49]		[-.49]
	23		.67		
	28		.74		
STRENGTH	**4**			.66	
	9			.56	
	14			.70	
	19			.63	
	24			.55	
	29			.60	
F4	**1**				
(Sport)	**6**				
	11	[.40]			[.56]
	16				
	21				
	26				.60
Eigenvalue		6.36	2.36	1.51	1.26
% Variance		26.52	9.83	6.27	5.26
Cum. % Variance		26.52	36.34	42.62	47.87

Note: For clarity, only loadings for the expected factors and unexpected loadings (cross-loadings in brackets) exceeding .40 are included. Items in bold show the ones that felt in their intended factors.

In the female sample Condition, Body and Strength sub-domains were clearly defined with five out of six and six out of six items loading on their intended factor.

Table 3.7 – Principal components factor loadings for PSPP items
(male university sample, n= 181)

Sub-scale	Item N°	F1 loadings	F2 loadings	F3 loadings	F4 loadings
SPORT	1	[.44]			[.48]
	6	[.55]	[.49]		
	11	.66			
	16	.47			
	21	.64			
	26	.68			
STRENGTH	**4**		.77		
	9		.67		
	14		.69		
	19				.43
	24		.69		
	29		[.45]		[.57]
BODY	**3**			.65	
	8			.70	
	13			.67	
	18				
	23			.47	
	28			.65	
F4	**2**				.69
(Condition)	7	[.40]		[.47]	
	12	[.48]			[.58]
	17				
	22				
	27	[.56]		[.42]	
Eigenvalue		7.52	2.57	1.39	1.30
% Variance		31.33	10.72	5.78	4.41
Cum. % Variance		31.33	42.05	47.83	53.24

Note: For clarity, only loadings for the expected factors and unexpected loadings (cross-loadings in brackets) exceeding .40 are included. Items in bold show the ones that felt in their intended factors.

In the male sample Sport, Strength and Body sub-domains were also clearly defined with four out of six and five out of six items *per* factor. However, in both analyses, Sport and Condition sub-domains showed a small number of cross-loadings.

3.3.3. - RELIABILITY

Internal consistency analyses were undertaken for each subscale using Cronbach Alpha. Table 3.8 shows coefficient Cronbach Alpha values and test-retest reliability correlation coefficients for the Portuguese university student's sample.

Table 3.8 – Coefficient Cronbach Alpha values and test-retest reliability correlation coefficients for Portuguese university students

	Sport		Condition		Body		Strength	
	female	male	female	male	female	male	female	male
Alpha	-	.68	.72	-	.79	.78	.74	.76
Test-retest	.88	.83	.75	.77	.77	.77	.72	.73

Body and Strength sub-domains showed a good internal consistency with values of 0.79 and 0.74 for female and 0.78 and 0.76 for male. The Condition sub-domain in female sample and Sport sub-domain in male sample presented lower levels of internal consistency with coefficient alphas values of 0.72 and 0.68, respectively. In addition, corrected item-total correlations for both groups were analysed ranging from 0.29 to 0.57. They represent the contribution of each item to its subscale total. Two of these items presented a value lower than 0.45 suggesting that they were not functioning effectively.

Test-retest reliability correlation coefficients ranged from r= 0.72 to 0.88 for females and from r= 0.73 to 0.83 for males, for a 16-day lapse period. PSPP subscales have therefore demonstrated preliminary internal reliability as well as stability. Moreover, RSES also presented a test-retest reliability value of r= 0.72 with a 14 days period between applications.

3.3.4. – HIERARCHICAL STRUCTURE

Fox (1990) outlined four conditions which indicate support for this hierarchical organisation: i) PSW should show the strongest relationship with Global Self-Esteem of all the PSPP sub-scales, ii) the sub-domain scales should show a stronger relationship with PSW than Global Self-Esteem, iii) relationships between the sub-domain scales and Global Self-Esteem should be greatly reduced or extinguished when the effects of PSW are statistically removed by partial correlation, iv) relationships among the sub-domain scales should be weaker when the effects of PSW are statistically removed.

Tables 3.9 and 3.10 present zero-order correlation coefficients of the female and male Portuguese university students.

Table 3.9 - Correlation coefficients – Female Portuguese university students

	GSE		PSW		COND		BODY	
	Sample		Sample		Sample		Sample	
	A	B	A	B	A	B	A	B
<u>Female</u>								
PSW	.55**	.51**						
COND	.33**	.30**	.51**	.49**				
BODY	.39**	.47**	.66**	.73**	.34**	.34**		
STREN	.19	.27**	.37**	.36**	.31**	.46**	.08	.23**

** coefficients significant at .01, * at .05

Table 3.10 - Correlation coefficients – Male Portuguese university students

	GSE		PSW		SPORT		BODY	
	Sample		Sample		Sample		Sample	
	A	B	A	B	A	B	A	B
<u>Male</u>								
PSW	.42**	.69**						
SPORT	.31**	.78**	.65**	.66**				
BODY	.33**	.50**	.73**	.66**	.49**	.51**		
STREN	.26**	.52**	.42**	.45**	.32**	.55**	.52**	.35*

** coefficients significant at .01, * at .05

In both sub-groups GSE correlated more highly with the PSW sub-domain than all the other sub-domains. The magnitude of the correlations is comparable to those found by Fox (1990) in the PSPP developmental study. Each of the sub-domain scales showed a stronger relationship with PSW than with GSE as it was previously suggested by Fox (1990).

Tables 3.11 and 3.12 present partial correlation coefficients of the female and male Portuguese university students and provide further evidence for the proposed hierarchical organisation with Global Self-Esteem.

Table 3.11 - Partial correlation coefficients controlling PSW effects – Female Portuguese university students

	GSE		COND		BODY	
	Sample		Sample		Sample	
	A	B	A	B	A	B
<u>Female</u>						
COND	.07	.06				
BODY	.03	.17**	-.00	-.03		
STREN	-.03	.10	.15	.34**	-.23**	-.06

** coefficients significant at .01, * at .05

Table 3.12 - Partial correlation coefficients controlling PSW effects – Male Portuguese university students

	GSE		SPORT		BODY	
	Sample		Sample		Sample	
	A	B	A	B	A	B
<u>Male</u>						
SPORT	.04	.60**				
BODY	.03	.08	.03	.12		
STREN	.10	.32*	.07	.38*	.34**	.08

** coefficients significant at .01, * at .05

Partial correlation coefficients showed that the significant relationship between GSE and the sub-domain scales is almost extinguished when the effects of PSW were statistically removed. The hierarchical structure is therefore confirmed in these correlational analyses.

Multiple regression analyses revealed that the three sub-domain scales were able to explain 63.6% of the variance in PSW for females and 66.2% of variance for males, providing further evidence that the sub-scales adequately represent self-perception content in the physical domain for a young Portuguese adults population.

3.3.5. - FURTHER STRUCTURAL ANALYSIS

The results of the initial reliability, factor, and correlational analyses supported by the logical pattern of mean scores in comparison with previously published samples indicate that the Portuguese version of the PSPP is functioning well. However, minor confounding between the Sport and Condition sub-scales that has been reported in other translated European versions (Atienza, Balaguer & Moreno, 1997; Van de Vliet et al., 2002a) was worthy of further investigation through structural equation modelling (SEM). The identified indexes of overall model fit for the female and male sub-samples are displayed in table 3.13.

Table 3.13 – Results of confirmatory factor analysis of four factors structure for the Portuguese university population

Gender	*Sample*	χ^2	*df*	*p*	χ^2 /df	*CFI*	*NFI*	*NNFI*	*GFI*	*SRMR*
Female	n=391	533.54	246	< .001	2.17	.88	.81	.87	.89	.057
Male	n=181	601.88	246	< .001	2.45	.78	.68	.75	.76	.090
Total	N=572	724.90	246	< .001	2.94	.89	.85	.88	.89	.054

The χ^2 values obtained in female (533.5) and male (601.9) sub-samples differ significantly from the independence model ($p < 0.001$). χ^2 /df values, a ratio value used to assess the adjustment to the model, was lower than 3.0 (Jöreskog, 1969) showing a good adjustment with values of 2.17 for females and 2.45 for males. However, ML estimator provided a clear message in the CFI, NFI, NNFI and GFI indexes across the different sub-samples with values of 0.88, 0.81, 0.87 and 0.89 for female and 0.78, 0.68, 0.75 and 0.76 for male. The analysed model of four correlated latent variables showed a better goodness of fit for female than for male sub-samples, however the goodness of fit indexes were very far away from the accepted convention cutoff value of 0.95 for CFI, NFI, NNFI and

GFI indexes, in both female and male sub-samples as well as for the SRMR> 0.80 index value suggested by Hu and Bentler (1999), in the female sub-sample. Based on these results and particularly the high number of cross-loadings between Sport and Condition items, and considering the recent proposal presented by Van de Vliet et al. (2002a) further models were specified for the Portuguese samples.

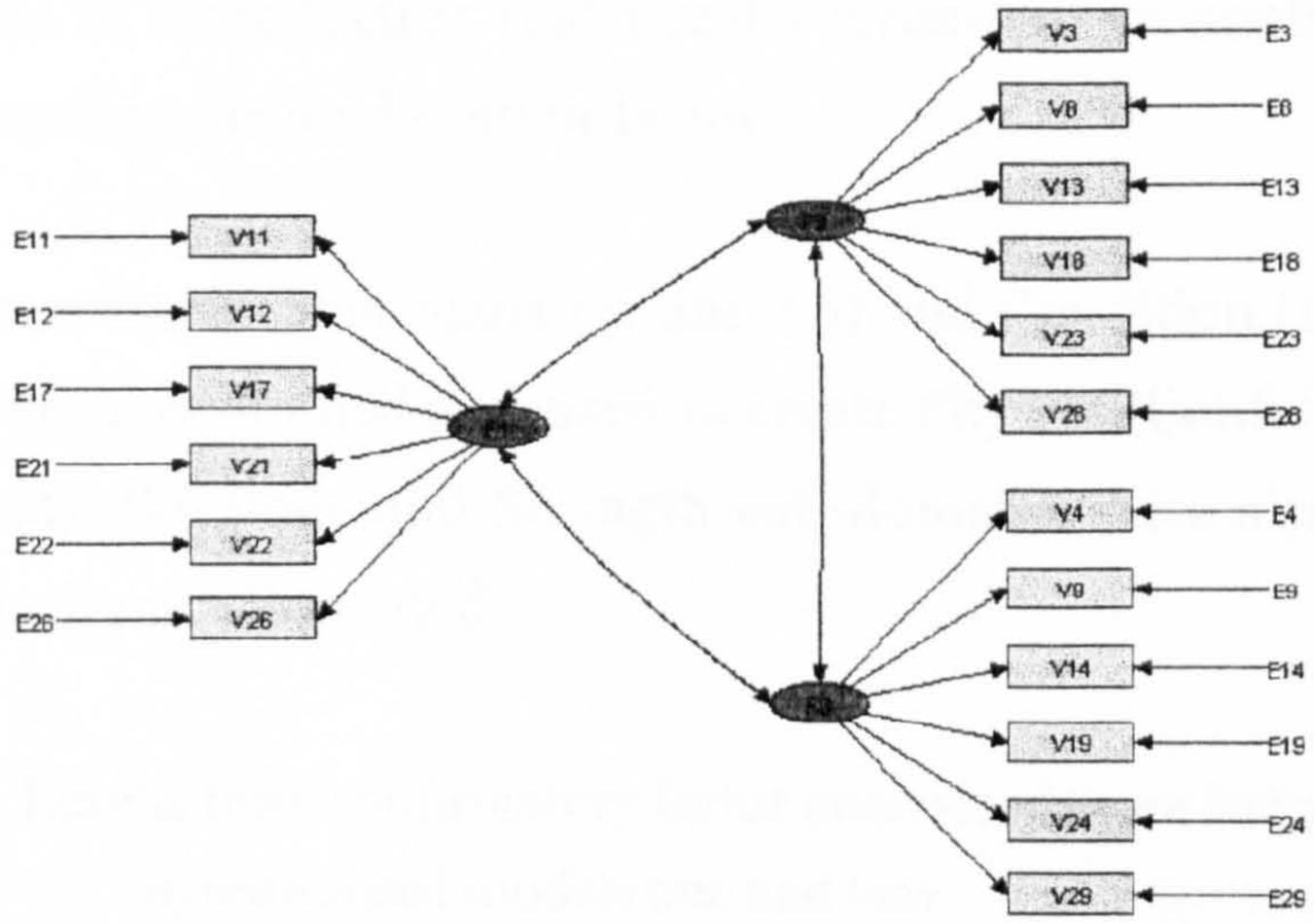

Figure 3.1 – Model one - three-factors six items-*per*-factor model

The first model (figure 3.1) was a three-factor six items-*per*-factor model. Items with higher loadings from Sport (11, 21, and 26) and Condition (12, 17 and 22) sub-domains were combined in a unique factor called Physical Confidence. This sub-domain represents a specific area of self-perceptions related with athletic achievement, involving perceptions of sport and athletic ability, level of physical condition and fitness as well as confidence in sport environments and exercise settings. Confidence items loaded strongly on this new factor. Both Body and Strength sub-dimensions are retained in their original structure. The second model (figure 3.2) was a three factor four items-*per*-factor model.

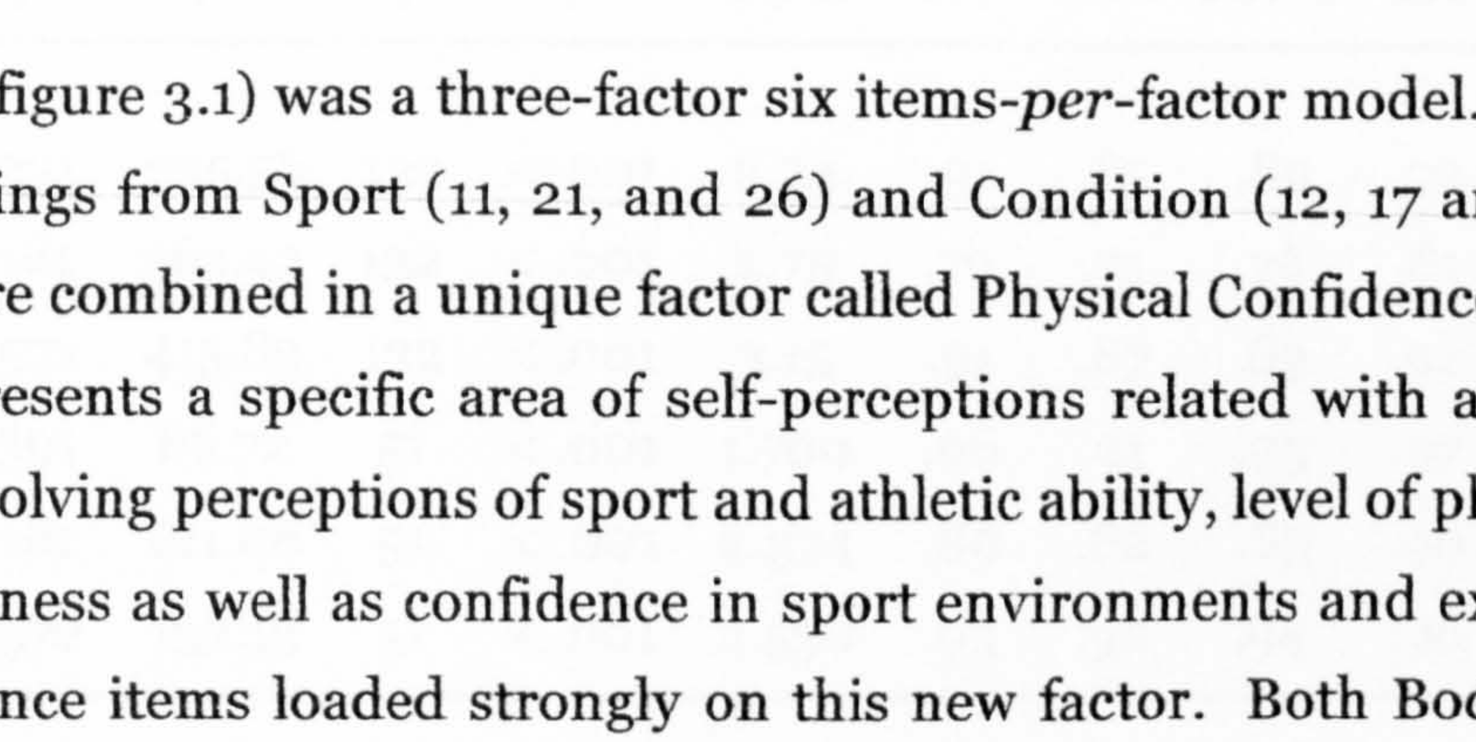

Figure 3.2 – Model two - three-factors four items-*per*-factor model

This second model hypothesises the possibility of "cleaning" the factorial structure making a more clearer model respecting the *minimum* number of three items *per* factor (Gorsuch, 1983). The model was specified in an attempt to a) reduce the size of the original instrument as it has shown during application procedures, to be quite time consuming, and b) further reduce factor cross loadings. Previous analyses indicated that problems occurred with the fifth and sixth items of some factors that usually cross-load in another factor and present lower loadings around 0.50 or below.

Therefore, the highest items from Sport (11 and 26) and Condition (12 and 17) sub-domains were again combined and used to create Physical Confidence sub-domain. Additionally, the Body and Strength sub-domains were also reduced with the weakest two items eliminated.

Table 3.14 – Results from confirmatory factor analysis of three factors hypothesised models one and two

Model /Gender	*Sample*	χ^2	*df*	*p*	χ^2/df	*CFI*	*NFI*	*NNFI*	*GFI*	*SRMR*
Mod1 female	n=391	295.56	132	< .001	2.24	.91	.85	.89	.92	.057
Mod1 male	n=181	362.42	132	< .001	2.75	.79	.71	.76	.81	.047
Mod 1 total	N=572	415.89	132	< .001	3.15	.91	.87	.89	.92	.056
Mod2 female	n=391	86.72	51	< .001	1.700	.96	.91	.95	.97	.040
Mod2 male	n=181	121.08	51	< .001	2.374	.89	.82	.85	.90	.068
Mod2 total	N=572	132.13	51	< .001	2.530	.95	.92	.94	.96	.041

SEMs were run on both models and produced improved values for CFI, NFI, NNFI and GFI indexes, both for females and males. Also, values for model two were greater than model one values for females (range 0.91 to 0.97 v 0.85 to 0.92) and males (range 0.82 to 0.90 v 0.71 to 0.81). Indices of overall model fit therefore support a three-factor structure of sub-domains with four items in each factor for the female sample of Portuguese university students. In spite of the cutoff value for SRMR was lower then 0.80 for the female sample, three of the four index cutoff values were higher then 0.95, including CFI, NNFI and GFI goodness of fit indices (Hu & Bentler, 1999).

3.4. - PART TWO – SECONDARY SCHOOL STUDENTS

Part two presents method, results and discussion of a complementary study used to confirm the goodness of fit for the three-factors four items-*per*-factor model selected in part one, using CFA as a follow-up, in a second sample of Portuguese secondary schools students (n=480). Results from the multigroup analysis assessing equality of factor structures over samples (Portuguese university and college students and Portuguese secondary schools students) as well as over male and female sub-groups for each sample, will also be presented.

3.5. - METHOD

3.5.1. - PARTICIPANTS

Sample C participants were Portuguese secondary school students (N= 480) from the 10th and 11th grades, 225 males (mean age 17.43 ± .64 yrs) and 255 females (mean age 16.82 ± 1.07 yrs) from eight secondary schools in the centre of Portugal. All the students were sedentary, i.e., were not involved in sport and physical activity other than the usual physical education classes at school.

3.5.2 - INSTRUMENTS AND MEASUREMENTS

The instruments used in this second part of the study were the same administered before, as part of the test battery (PSPPp and RSESp), to the Portuguese college and university students sample. Data analysis was again conducted separately by gender. The variables analysed in this study were the different sub-domains of the physical self found in part one (Physical Confidence, Body and Strength) as well as the PSW and the GSE.

3.5.3. - PROCEDURES

Procedures used in this study were similar to those used with the university student's sample. Each student received a test battery, and questionnaires were administered by the same research assistant using standardised instructions in

quiet classroom conditions, during the last fifteen minutes of the physical education class. The difficulties with the structured-alternative format were also found in this second sample and a small number of participants was confused and did not followed the initial instructions. Percentage of spoiled returns was 3.3% with a total number of sixteen questionnaires being excluded. Reliability for the PSPPp and the Portuguese version of RSES was performed using a re-administration of the instruments to a sample of twenty students, ten female and ten male, after a lapse period of 16 days. Criteria for the test-retest sample selection was also performed on a lottery basis and test-retest reliability was assessed using Pearson correlation coefficients for sub-domain mean scores from the first and the second administration. These coefficients ranged from r= 0.66 to 0.82 for females and from r= 0.58 to 0.89 for males. The PSPP therefore demonstrated preliminary evidence stability. Moreover, RSES also presented a test-retest reliability value of r= 0.64 with a 14 days period between applications.

3.5.4. - STATISTICAL ANALYSES

Further support was needed for the three-factor structure model for the PSPPp. This sample of Portuguese secondary school students was used for further statistical analysis and SEM was conducted by gender as a follow-up to test the Portuguese model structure (Figure 3.2).

The invariance of the structural parameters of the Physical Self-Perception Model was also tested, for the Portuguese data, using multigroup analysis (Bentler, 1995b) in order to test equality of factor structures over samples (Portuguese university and college students, and Portuguese secondary school students) as well as over male and female subgroups for the different samples, as recommended by Jöreskog & Sorböm (1988). A multigroup model will lead to a predicted value for the covariance or correlation matrix for each group, and the parameters in the model are estimated by making these predicted values as "close" as possible to the observed values. The overall measure of "closeness" will be simply a weighted average of the closeness values of the individual groups. It is important to notice that multigroup models are, in general, harder to estimate than those involving a single group, and good starting values are often critical to obtaining well-behaved convergence. "The greater the number

of groups, the more difficult it will be to find an acceptable fit for the data from all the groups simultaneously" (Dunn, Everitt & Pickles, 1993, pp. 133-134).

The initial stage in a multigroup analysis is to assess whether the different groups under investigation have the same population covariance or correlation matrix. If this is the case, the different sample covariance/ correlation matrices would simply be estimates of the same single population matrix. Structural models evaluated on data from the different groups would be describing the same population, and so the models should be identical apart from chance variation. In such cases, rather then estimating the parameters of the model from each group, a multigroup analysis analysing all data simultaneously should be used, and the model being specified to be identical in each group. If the covariance/ correlation matrices of the groups are found to differ, models in which some parameters are allowed to differ might be evaluated in an attempt to account for the observed discrepancies (Dunn, Everitt & Pickles, 1993). For the present study multigroup analysis was performed using EQS - Structural Equation Program for Windows 5.7b Copyright © 1985-1998 by Peter M. Bentler.

3.6. - RESULTS

3.6.1. - DESCRIPTIVES

Descriptive analysis from age group variable sample C show that 253 of the initial 255 Portuguese female secondary school students (99,2%) belong to the adolescence age group while the other 2 (0.8%) belong to the young adults age group (Haywood, 1993). Data from male sub-sample show that 212 of the initial 225 Portuguese male secondary school students (94,2%) belong to the adolescence age group while the other 13 (5.8%) belong to the young adults age group.

Tables 3.15 and 3.16 provide a comparison of PSPP subscale mean scores and standard deviation values for female and male subjects from sample C used in this study as well as from other studies using the same instrument and samples with similar characteristics (Hayes, Crocker & Kowalski, 1999; Page et al., 1993).

Table 3.15 – Mean scores and standard deviations from PSPP subscales – a female cross-cultural comparison

Sub-scales			**Fox, 1990**		**Page et al., 1993**		**Hayes et al., 1999**	
	Sample C							
Female	n=255		n=431		n=52		n=94	
			M	SD	M	SD	M	SD
SPORT	13.82	3.13	14.16	4.30	16.50	3.68	16.30	3.53
CONDITION	14.22	3.22	14.40	4.10	18.01	3.37	16.81	3.69
PHYCONF	14.65	3.32	-	-	-	-	-	-
BODY	13.42	3.51	13.33	4.26	14.71	3.52	13.27	4.16
STRENGTH	13.91	3.07	14.66	3.70	16.02	3.48	15.30	3.83
PSW	14.17	3.54	14.20	3.80	15.85	3.77	15.33	3.89
GSE	28.55	3.94	-	-	-	-	-	-

The pattern of mean score values presented in sample C (secondary school students) was similar to those found in previous studies, particularly in groups with similar characteristics.

Table 3.16 – Mean scores and standard deviations from PSPP subscales – a male cross-cultural comparison

Sub-scales		**Fox, 1990**		**Page et al., 1993**		**Hayes et al., 1999**	
	Sample C						
Male	n=225	n=383		n=80		n=89	
		M	SD	M	SD	M	SD
SPORT	16.36	3.33	17.06	3.39	18.30	2.59	18.66	2.33
CONDITION	16.12	3.49	16.63	3.93	14.71	3.52	18.34	3.55
PHYCONF	16.65	3.53	-	-	-	-	-	-
BODY	15.50	3.25	15.23	3.56	16.17	2.77	16.39	3.30
STRENGTH	15.28	3.09	15.66	3.50	15.26	3.12	16.46	3.61
PSW	16.26	3.41	17.05	3.55	17.51	2.92	18.46	2.76
GSE	30.88	4.55	-	-	-	-	-	-

Secondary school students (sample C) for both female and male sub-samples presented higher mean score values for all the PSPP sub-domains, with the exception of Body Attractiveness in females, when compared with their older non-sport sciences Portuguese colleges (Sample B – see tables 3.1 and 3.2). However, their mean score values were lower for all the PSPP sub-domains, both for female and male sub-samples, when compared with their older sport sciences Portuguese colleges (Sample A – see tables 3.1 and 3.2).

Both Portuguese female university and secondary school students presented lower mean values for all PSPP sub-domain scales when compared with Portuguese male university ($p< 0.000$) and secondary school ($p< 0.000$) students as well as in Global Self-Esteem ($p< 0.01$ and $p< 0.000$) respectively. These gender differences have consistently emerged across studies and substantiate the need for self-perception analyses to be systematically conducted by gender.

3.6.2. – HIERARCHICAL STRUCTURE

Further support was found for the hierarchical organisation of the model in Portuguese youth students. Zero-order correlation coefficients and partial correlation coefficients showed evidence of a clear relationship between all PSPP sub-domains (including Physical Confidence), PSW functioning as a mediator, and GSE.

Table 3.17 - Correlation coefficients – secondary school students

	GSE	PSW	SPORT	COND	PHYCONF	BODY
	Sample C	Sample C	Sample C	Sample C	Sample C	Sample C
<u>Female</u>						
PSW	.48**					
SPORT	.22**	.39**				
COND	.20**	.45**	.65**			
PHYCONF	.25**	.43**	.82**	.82**		
BODY	.35**	.61**	.26**	.35**	.29**	
STREN	.20**	.37**	.51**	.55**	.49**	.26**
<u>Male</u>						
PSW	.42**					
SPORT	.37**	.60**				
COND	.34**	.63**	.60**			
PHYCONF	.40**	.63**	.80**	.79**		
BODY	.39**	.65**	.47**	.54**	.49**	
STREN	.26**	.46**	.36**	.42**	.38**	.41**

** coefficients significant at .01, * at .05

Each PSPP sub-domain scale (including Physical Confidence) again showed a stronger relationship with PSW than with GSE, as previously found in samples A and B (university and college students).

Table 3.18 - Partial correlation coefficients controlling PSW effects – secondary students

	GSE	SPORT	COND	PHYCONF	BODY
	Sample C	Sample C	Sample C	Sample C	Sample C
<u>Female</u>					
SPORT	.05				
COND	-.02	.57**			
PHYCONF	.06	.78**	.78**		
BODY	.08	.03	.10	.03	
STREN	.03	.43**	.46**	.39	.04
<u>Male</u>					
SPORT	.16*				
COND	.11	.35**			
PHYCONF	.19*	.68**	.66**		
BODY	.17*	.13	.22**	.14*	
STREN	.08	.12	.19**	.14*	.17**

** coefficients significant at .01, * at .05

Partial correlation coefficients showed that the significant relationship between GSE and all sub-domain scales (including Physical Confidence) is again almost extinguished when the effects of PSW were statistically removed, as previously found for the university and college students samples.

3.6.3. – STRUCTURAL ANALYSIS

In order to find further evidence to support the most appropriate model for the Portuguese population another CFA using SEM method was conducted by gender as a follow-up using the adolescent secondary school student's sample. Only model two (Figure 3.2) was assessed because previous results showed higher indices of overall model fit for this model.

Table 3.19 – Results from confirmatory factor analysis using model two - female and male Portuguese secondary school students

Model /Gender	*Sample*	χ^2	*df*	*p*	χ^2/df	*CFI*	*NFI*	*NNFI*	*GFI*	*SRMR*
Mod2 female	255	98.69	51	<.001	1.94	.88	.78	.85	.94	.061
Mod2 male	225	119.01	51	<.001	2.34	.83	.74	.78	.92	.080
Mod2 total	480	168.21	51	<.001	3.30	.87	.82	.83	.94	.059

The identified indexes of overall model fit for the female and male sub-samples are displayed in table 3.19. The χ^2 values obtained for female (98.7) and for male (119.0) differ significantly from the independence model ($p< 0.001$). The values of χ^2/df were lower than 3.0 (Jöreskog, 1969) showing a good adjustment with values of 1.94 for female and 2.34 for male sub-samples. However, the ML estimator provided a clear message in CFI, NFI, NNFI and GFI indexes across the different sub-samples. The goodness of fit indexes for these correlated latent variables was very far away from the cutoff value of 0.95 suggested by Hu and Bentler (1999).

3.6.4. – MULTIGROUP ANALYSIS

The invariance of the structural parameters for the PSPP model was tested using multigroup analysis (Bentler & Wu, 1995) in order to test equality of factor structures over samples as well as over male and female subgroups for the different samples, as recommended by Jöreskog and Sorböm (1988a).

Table 3. 20 – Results of the multigroup analysis for the Portuguese youth population – female and male university students (n=391 and n=181) and female and male secondary school students (n=255 and n=225)

Multigroup analysis	χ^2	*df*	*p*	χ^2 /df	*CFI*	*NFI*	*NNFI*	*GFI*	*SRMR*
	644.43	285	< .001	2.26	.85	.75	.86	.90	.092

Results from multigroup analysis for the Portuguese youth population samples showed good indices of overall model fit for model two over samples (university students, female and male, and secondary school students, female and male). Considering that multigroup models are harder to estimate due to the number of groups involved in the analysis, good starting values are often critical to obtain. However results from the present analysis showed index values of 0.85 and 0.86 for CFI and NNFI, while GFI presents a value of 0.90 and SRMR was close to zero (0.092).

3.7. – DISCUSSION

The purpose of study one part one was to investigate the reliability and validity of a Portuguese translation of the PSPP, the PSPPp. The purpose of study one part two was to find further statistical support for the three-factors structure hypothesised for the Portuguese youth population.

A similar population to that used in the development of the instrument in the USA was chosen to allow immediate comparison. Results from the 572 Portuguese university students reveal similar patterns, including gender differences, of mean score values, standard deviations and ranges in the items and sub-scales to previous studies (Fox & Corbin, 1989; Hayes Crocker, & Kowalski, 1999; Page et al., 1993).

Comparisons between the two Portuguese samples (sport sciences students and non-sport sciences students) supported the hypothesis that Sport/PE students would produce higher mean score values on the PSPP as well as in GSE, for both female and males sub-samples (Page et al., 1993; Sonstroem & Potts, 1996). On the other hand, gender analysis also supported the tendency for male students present higher mean score values then female students for all PSPP sub-domains as well as for GSE (Fox & Corbin, 1989; Fox, 1990; Marsh, 1989; Marsh, 1998).

In the validation process further support was provided for the existence of the hierarchical organisation of self-perceptions in the physical domain for all analysed samples (Fox & Corbin, 1989), (Sonstroem, Harlow & Josephs, 1994). A good degree of support for the hierarchical organisation structure among factors was found, as well as for the existence of PSW as a mediator both in university/college students as well as in secondary school students. Additionally, the level of variance in PSW explained by the sub-domains suggest that the major portion of contents used to express general feelings of Physical Self-Worth arises from the four sub-domains used in PSPP.

Unfortunately, however, the data do not provide strong support for the four sub-domain factor model of PSPP proposed by Fox and Corbin (1989) that has

been frequently confirmed in many other studies with adults (Hayes, Crocker & Kowalski, 1999; Page et al., 1993; Sonstroem & Potts, 1996; Sonstroem, Speliotis & Fava, 1992) as well as with children (Crocker, Eklund & Kowalski, 2000; Eklund, Whitehead & Welk, 1997; Welk, Corbin & Lewis, 1995; Whitehead, 1995), in English spoken settings.

Structural equation modelling revealed a poor goodness of fit to the original model in the female and male samples, with model fit index values ranging from 0.81 to 0.89 for female sample and from 0.68 to 0.78 for the male students sample. The source of the discrepancy was the significant number of cross loadings occurring between Condition and Sport items. This has already been previously reported for other European countries, in non-English spoken settings, such as the Spanish population (Atienza, Balaguer & Moreno, 1997) and the Flemish-Belgian population (Van de Vliet et al., 2001). A study conducted by Biddle et al. (1993) also reported similar difficulties found in English children. The values reported for the Spanish population show a poor support for the four factors model structure with goodness of fit indexes only reaching 0.82. Internal consistency proved to be good. For the Belgian population, Van de Vliet et al., (2002a) reported a much improved CFA solution when the Sport and Condition sub-scales were combined into one larger scale, with CFI index values increasing from 0.68, for female and male, to 0.90 for female and 0.91 for male.

In this study, CFA also revealed that a better goodness of fit could be achieved by combining Condition and Sport items. A further improvement was made by reducing the sub-scales to the best four items. This is in contrast to the Flemish version that simply adds the 12 items from both sub-scales together. This improvement changed significantly the goodness of fit indexes with results increasing from 0.85 to 0.92 and 0.91 to 0.97 in females and from 0.71 to 0.81 and 0.82 to 0.90 in males. The goodness of fit information for this model suggests a satisfactory goodness of fit for the female sub-sample but a poor goodness of fit for the male sub-sample, however further analysis is needed.

However, CFA did not support the goodness of fit for this new model (model two) using a different sample of female and male Portuguese secondary

students. Non-normed Fit Index (NNFI) and Comparative Fit Index (CFI) reached 0.85 and 0.88 for female but only 0.78 and 0.83 for male. Goodness of fit index values did not reach the conventional value of 0.95 (Hu & Bentler, 1999), however, results were similar to other studies with the Portuguese students (Ferreira & Fox, 2002b) where the goodness of fit for this three-factors model was better in female than in male sub-samples, corroborating the results found in part one.

Multigroup analysis results showed a good pattern of responses for the different items of the PSPPp over samples. Based on these results support was found to the use of model two for the PSPPp with the Portuguese youth population. Young Portuguese people respond to the different items of the questionnaire using a similar pattern of answers, i.e., understanding the questions in a similar way over the different samples analysed in study one and two.

Clearly, the difference between these data and those from the USA studies are substantive. The concepts of Sport Competence and Physical Conditioning acquire a different meaning at least in some European cultures. The term 'sport' in many European languages embraces a wider range of physical activities than is the case in English speaking countries where the emphasis is on competitive team games.

'Sport' in the context of the German *Sportwissenschaft* (Sport Sciences) refers to all formal and informal physical activities very much related with different competitive sports but also associated to other essential form of physical activity such as callisthenics, fitness-training and aerobic training (Haag, 1986). For some people 'sport' is synonymous of elite competition, for others, in special for those working in the area of Physical Education, 'sport' is physical activity, including formal and informal competition, recreation, games and exercise (Zakrajek, 1991).

In young Portuguese adolescents and adults, reference to self-perceptions in sport seems to elicit similar responses to exercise, endurance and stamina. In essence, perceived competence in exercise settings is similar to perceived ability in sport. At this point, there is no differentiation between the two and this

would suggest that a performance rather than health-related reference point is used when formulating self-perceptions in these aspects of the physical self. This is why in this chapter, the term 'Physical Confidence' has been applied to the new sub-scale specified in model two.

Currently, it is not entirely clear whether the confounding of sport and exercise in several European samples is a result of semantics or a reflection that health and performance related aspects of sport and exercise have not yet become differentiated in the minds of the public. A dynamic approach to self-perception study will be required to unravel these subtleties. In the meantime, a cross-cultural perspective to standardised instrument development is providing some insight into the cultural differences in meaning of key constructs and values in sport and exercise. To some extent, the process of instrument development is proving to be as valuable as the final product.

Study one (part one and two) focused attention on the establishment of validity and reliability of the PSPP in the Portuguese youth population. This study had no disabled athletes. However, it provided an important link with study two – assessment of disability sport athletes self-perceptions in the physical domain – providing evidence for the relevance of PSPP to the Portuguese population and to the possibility to use it in Portuguese language (PSPPp). The greatest limitation of this instrument is to be population specific (Fox, 1990) requiring a rigorous psychometric analysis before it could be confidently used in other populations rather than the US. Results from study one clearly supported the use of PSPPp in Portuguese youth population and no major limitations were identified to discourage its exploratory application in Portuguese wheelchair sport athletes.

CHAPTER IV

STUDY TWO – THE DEVELOPMENT OF PHYSICAL SELF-PERCEPTIONS IN PORTUGUESE BASKETBALL PLAYERS WITH AND WITHOUT DISABILITY

4.1. - INTRODUCTION

The participation of people with disability in sport and recreational activities offers opportunities for individuals to improve their self-perceptions in the physical as well as in the social domain (Blinde & McClung, 1997). The physical world of sport and exercise is seen as a particular revealing arena for examining critical relationship between disability and self (Sherrill, 1997). Sport is, due to the small number of socialization experiences frequently related with negative social feedbacks, discriminatory and segregational attitudes, a unique opportunity of interaction and construction of a particular and individual identity (Williams, 1994a). However the study of particular aspects of physical self and body image in individuals with special needs is still an underdeveloped area of research.

Based on the review of the literature it is hypothesised that wheelchair sport athletes with congenital disabilities (Campbell, 1995), with longer involvement in sport and higher frequency of doing sport (Patrick, 1986), that achieved higher competitive levels (Campbell & Jones, 1994, Crocker, 1993, Szyman, 1980) and with more years of occurrence of the lesion (Green, Pratt & Grigsby, 1984) showed higher and more stable levels of physical self-perceptions as well as higher levels of Global Self-Esteem. On the other hand, wheelchair sport athletes with more severe types of lesion and who are older at the time onset of disability are hypothesised to have lower levels of physical self-perceptions and Global Self-Esteem. Finally, wheelchair sport athletes are hypothesised to have lower levels of physical self-perceptions and Global Self-Esteem than non-disability sport athletes and higher levels of physical self-perceptions and Global Self-Esteem than sedentary groups without disability.

4.2. - METHOD

4.2.1. - PARTICIPANTS

Study two is based in a sample of Portuguese basketball players (N=150) participating in the national competition during 2000/01 season. Sample D subjects were 64 wheelchair basketball players, 5 females and 59 males from eight teams that played in the national wheelchair competition. The mean age for females was 33.00 ± 8.25 years and for males was 32.80 ± 11.34 years. The small number of female wheelchair basketball players in sample D is due to the fact that few females play wheelchair basketball in Portugal and so are integrated in male wheelchair basketball teams. Sample D represents 80% of all wheelchair sport athletes participating in regular competitions in Portugal. Sample E subjects were 86 basketball players without disability, 17 females and 69 males from eight different teams competing in different levels of the national competition (professional league, 1st division and 2nd division). The mean age for females was 22.18 ± 2.77 years and for males was 20.91 ± 4.55 years.

4.2.2. - INSTRUMENTS

The same test battery used in study one containing the Rosenberg Self-Esteem Scale (RSES) and the Portuguese version of the Physical Self-Perception Profile (PSPPp) was used to assess Basketball players´ self-perceptions in the physical domain. Study one results supported a preliminary validation of PSPPp with young Portuguese adults, however PSPPp has not yet been used in special groups, particularly in people with physical disabilities.

4.2.3. – VARIABLES

The review of literature in the area of disability sport showed the importance of a wide range of independent variables such us competitive level, time onset of disability and lesion source for the study of specific disability groups.

Independent variable in study two were defined as:

- Age/ age group – Chronological age in years calculated according to the following example: 17 years and six months will be considered as 18 years and 17 years and five months will be considered as 17 years. Four groups were considered: i) adolescents (8-20 yrs.), ii) young adults (21-40 yrs.), iii) middle-aged adults (41-60 yrs.), and iv) older adults (61 or more yrs.).
- Lesion source – Two groups were considered: i) congenital (individuals, born with their disability) and ii) acquired (individuals who acquired the disability later in life.
- Type of lesion – Five groups were considered: i) paraplegia, ii) poliomyelitis, iii) spina bifida, iv) amputation, and v) others, including individuals with other physical or orthopaedic impairments.
- Time since onset of disability – Three groups were considered: i) under 4 years, ii) from 4 to 10 years, and iii) more than 10 years.
- Time of sport practice – The amount of time (years) spent in practicing sport regularly. Four groups were considered: i) up to 1 year, ii) 1 to 4 years, iii) 5 to 10 years, and iv) 11 or more years.
- Frequency of doing sport – Number of times per week that each participant practices sport or is involved in training sessions, including competitive games. Three groups were considered: i) twice a week, ii) three times a week, and iii) four or more times a week.
- Functional classification – Involves the functional level of ability to perform a group of skills specific to wheelchair basketball. For this variable nine groups were considered varying from 0.5 to 4.5 points and official sport classification values provided by the Portuguese Disability Sport Federation.
- Competitive level – Involves the level of competition the athlete has already achieved. Two groups were considered: i) national level and ii) international level.

Dependent variables analysed in this study included the five different dimensions of the PSPP (Sport, Condition, Body, Strength and PSW) as well as the Global Self-esteem (GSE), as previously described for study one.

4.2.4. - PROCEDURES

Participants were tested in small groups ranging from 5 to 12 individuals each after training sessions or after national competition games, with previous consent from the coaches and from the national organisation. After a short briefing about the purpose of the study, athletes received a test battery administered by the same research assistant using standardized instructions and available to answer any questions during the administration period. Difficulties with the structured-alternative format were found with wheelchair sport participants as well as other additional difficulties. Where athletes had language difficulties, the researcher read the questions aloud. Objective instructions were given to all participants as well as encouragement to ask to one-to-one help in the first few minutes of administration. Test-retest reliability for the PSPP was performed using a re-administration of the instrument to a random sample of 10 participants after a lapse period of 16 days.

4.2.5. - STATISTICAL ANALYSIS

Exploratory factor analysis (EFA) using the principal components analysis method (with Varimax rotation) was used for each sample in order to establish the independence and integrity of the PSPP original four sub-domain scales Sport, Condition, Body and Strength (Fox & Corbin, 1989) in Portuguese basketball players with and without disability. EFA was performed forcing a four factor extraction. The final factorial structure was selected based on the same criteria previously used for study one.

In study two EFA was carried out with less then five subjects per item but results were only used to understand the behaviour of the different variables and compare the solution found with the original model. These procedures are supported by (Arrindell & van der Ende, 1985) and (Bryman & Cramer, 2001). These authors proposed some flexibility to the number of subjects required for this technique, suggesting that EFA can be carried out on smaller samples to describe the relationship between the variables. However, not much confidence should be placed on the fact that the same factors would emerge in a second sample due to the small sample size. Finally, differences between groups were tested using independent T-test and analysis of variance (ANOVA).

4.3. – RESULTS

4.3.1 – DESCRIPTIVES

Descriptive analyses from sample D show that 39 of the initial 64 Portuguese wheelchair basketball players (60.9%) were young adults (21 to 40 yrs.) while 13 players (20.3%) belong to the adolescence age group (8 to 20 yrs.). The remaining 12 players (18.8%) were middle aged adults (41 to 60 yrs.) (Haywood, 1993). Fifty nine players (92.2%) were male and 5 were female (7.8%). Due to the big difference between male and female sub-samples no further analyses other than descriptive statistics were conducted by gender. Instead data were combined. Descriptive analyses from sample E (basketball players without disability) show that for the female sub-sample, 4 players (23.5%) were adolescents age groups (8-20 yrs.) while the other 13 (76.5%) were young adults (21-40 yrs.). In the male sub-sample 39 players (56.5%) were adolescents (8-20 yrs.), while the other 30 (43.5%) were young adults (21-40 yrs).

Table 4.1 presents the mean and standard deviation values from PSPP sub-scales and from GSE of Portuguese female basketball players with and without disability as well as from other female Portuguese samples from study one.

Table 4.1 – Means and standard deviations from PSPP subscales - female basketball players with and without disability

Sub-scales	*Wheelchair basketball sample D*		*Basketball players sample E*		*University students sample B*		*Secondary school students sample C*	
<u>Female</u>	N=5		N=17		n=311		n=255	
	M	SD	M	SD	M	SD	M	SD
SPORT	14.60	3.21	18.12	2.45	13.25	3.24	13.82	3.13
CONDITION	15.20	3.11	19.47	2.90	13.24	3.18	14.22	3.22
BODY	14.00	5.15	16.82	2.92	13.75	3.74	13.42	3.51
STRENGTH	18.40	3.91	17.29	3.84	13.28	3.01	13.91	3.07
PSW	15.40	3.65	18.71	3.51	13.89	3.74	14.17	3.54
GSE	23.60	2.88	33.82	4.14	30.23	3.97	28.55	3.94

The pattern of mean values presented in sample D and sample E is similar to those found in previous studies, in groups with similar characteristics. Female athletes (samples D and E) present higher mean score values than female sedentary groups (samples B and C) for all PSPP sub-domains. Female wheelchair basketball players present higher mean score values for all PSPP sub-domains than sedentary female groups without disability (samples B and C). However, they present lower mean score values than their basketball colleagues without disability (sample E).

Table 4.2 – Means and standard deviations from PSPP subscales - male basketball players with and without disability

Subscales	*Wheelchair basketball sample D*		*Basketball players sample E*		*University students sample B*		*Secondary school students sample C*	
Male	N=59		N=69		n=38		n=225	
	M	SD	M	SD	M	SD	M	SD
SPORT	16.78	3.17	17.32	2.80	14.76	3.98	16.36	3.33
CONDITION	16.54	3.19	17.32	2.85	14.68	3.28	16.12	3.49
BODY	15.00	3.30	16.07	3.10	14.16	3.66	15.50	3.25
STRENGTH	16.37	3.06	15.94	3.02	14.47	3.05	15.28	3.09
PSW	16.59	3.63	16.93	2.80	15.03	3.77	16.26	3.41
GSE	23.56	3.45	30.19	4.28	30.84	4.57	30.88	4.55

The pattern found for males is similar to that in females. Male athletes (samples D and E) also present higher mean score values than male sedentary groups (samples B and C) for PSPP sub-domains with an exception for Body sub-domain between wheelchair sport athletes (sample D) and secondary school sedentary students (sample C). However, they present similar mean score values than their basketball colleagues without disability (sample E).

Tables 4.1 and 4.2 and figure 4.1 present mean score values and standard deviations for Global Self-Esteem variation over samples, for both male and female sub-groups.

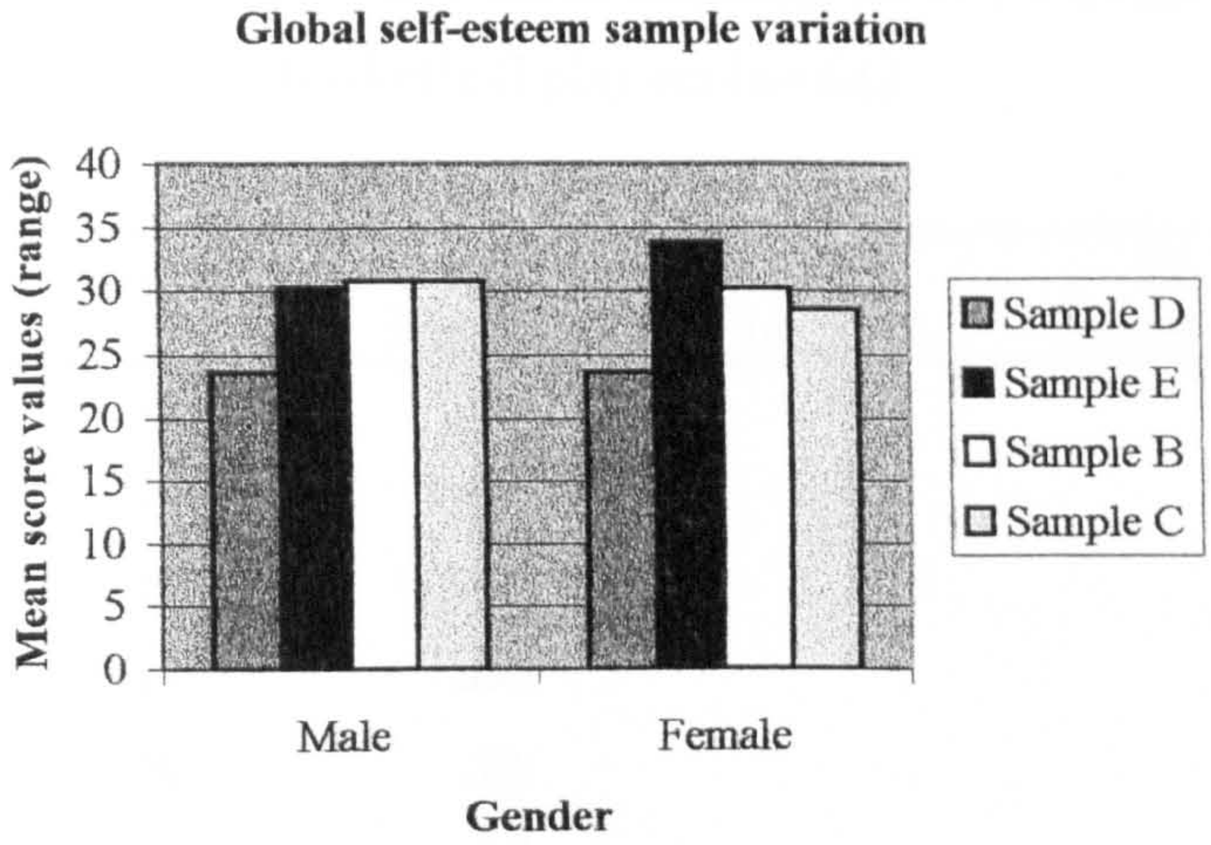

Figure 4.1 – Global Self-Esteem variation over samples B, C, D and E

Female basketball players (sample E) present higher levels of self-esteem than any other female group. In contrast, male basketball players present a similar level of self-esteem to that presented by other sedentary male groups (samples B and C). Wheelchair female and male sport athletes present lower mean score values for Global Self-Esteem than their basketball colleagues without disability (sample E) as well as when compared with other sedentary groups without disability (samples B and C).

4.3.2 - INSTRUMENT DIMENSIONALITY

The results of the preliminary factor analysis from Portuguese wheelchair basketball players (samples D) are presented in table 4.3. Exploratory factor analysis (EFA) with *Varimax* rotation was performed with a forced four factor extraction. The final factorial structure explained a total of 50.70 % of the variance among the subscale items. Due to the small number of female players in Portuguese wheelchair basketball and also because female players were integrated into male teams and competed in males' national competition, no gender differences were analysed for this sub-sample.

Table 4.3 – Principal components factor loadings for PSPP items – wheelchair basketball players (n=64)

Sub-scale	Item N°	F1 loadings	F2 loadings	F3 loadings	F4 loadings
	2	.60			
PHYSICAL	12	.84			
CONFIDENCE	17	.67			
(SPORT +	11	.80			
CONDITION)	19	.75			
	21	.58			
	23	.49			
	29	.57			
	3		.62		
BODY	18		.63		
	28		.49		
	9		.64		
	14		.78		
	4			.49	
F3	6			.61	
	7			.75	
	24			.49	
	27			.60	
F4	22				.71
Eigenvalue		4.12	3.05	2.93	2.07
% Variance		17.15	12.71	12.22	8.62
Cum. % Variance		17.15	29.86	42.08	50.70

Note: For clarity only loadings for the expected factors and unexpected loadings (cross loadings in brackets) exceeding .40 are included.

EFA results from wheelchair basketball players revealed that just two sub-domains, Physical Confidence and Body, were clearly defined with a minimum of three items per factor. The Physical Confidence sub-scale presented a minimum of three items from both Sport and Condition sub-scales, as previously suggested in study one. Most items did not load on their intended factors, with a high number of cross-loadings occurring and items being excluded for the sake of clarity. The results of the preliminary factor analysis

from Portuguese basketball players, both female and male groups are presented in table 4.4 and 4.5.

Table 4.4 – Principal components factor loadings for PSPP items – female basketball players without disability (n=17)

Sub-scale	Item Nº	F1 loadings	F2 loadings	F3 loadings	F4 loadings
STRENGTH	4	.82			
	6	.59	[.41]		
	7	.79			
	9	.97			
	14	.83			
	18	.60	[-.41]		
	19	.65	[.55]		
	24	.87			
	29	.60	[.56]		
PHYSICAL CONFIDENCE (SPORT + CONDITION)	2		.68		
	11		.63		
	12		.61		
	16		.60		[-.42]
	17		.63	[.54]	
	21		.75		
	22		.74	[.44]	
BODY	1			.74	
	3	[.55]		.70	
	13			.66	[-.64]
	23			.76	
	28			.93	
F4	8				.86
Eigenvalue		6.12	4.71	3.98	2.24
% Variance		25.49	19.60	16.59	9.32
Cum. % Variance		25.49	45.09	61.68	71.00

Note: For clarity only loadings for the expected factors and unexpected loadings (cross loadings in brackets) exceeding .40 are included.

Table 4.5 – Principal components factor loadings for PSPP items – male basketball players without disability(n=69)

Sub-scale	Item N°	F1 loadings	F2 loadings	F3 loadings	F4 loadings
F1	2	.49			
	11	.61			
	12	.73			
	13	.63			[.43]
	21	.72			
	23	.66			
	28	.45			
STRENGTH	1	[.40]	.63		
	4		.62		
	9		.76		
	19		.56		
	24		.70		
	29		.58		
PHY CONF (SPORT + CONDITION)	6			.47	
	14			.54	
	16			.75	
	22			.65	
	26			.57	
	27			.55	
BODY	3				.61
	8				.48
	17				.53
	18				.76
Eigenvalue		3.51	2.97	2.59	2.18
% Variance		14.62	12.36	10.78	9.09
Cum. % Variance		14.62	26.97	37.76	46.85

Note: For clarity only loadings for the expected factors and unexpected loadings (cross loadings in brackets) exceeding .40 are included.

EFA for basketball players without disability also revealed four factors that explained 71.0% of the variance for female and 46.85% of the variance for male. EFA results from basketball players without disability also found support and

confirmed the model suggested by (Fonseca & Fox, 2002) and (Ferreira & Fox, 2002b, 2003) for the Portuguese population with a clear definition of Physical Confidence, Body and Strength as sub-domains of the physical self. However, in the case of wheelchair basketball players EFA results partially supported this model, with only two factors Physical Confidence and Body being clearly defined.

4.3.3. - RELIABILITY

Internal consistency and reliability was undertaken for each subscale using coefficient Cronbach Alpha values. Sub-scales for wheelchair sport athletes showed an acceptable internal consistency with Alphas values of .79 and .66 for Physical Confidence and Body sub-domains.

Female basketball players without disability subscales present a good internal consistency with Alpha values of 0.84, 0.73 and 0.92 for Physical Confidence, Body and Strength sub-domains. On the other hand, male basketball players without disability subscales present an acceptable internal consistency with Alpha values of 0.65, 0.62 and 0.73 also for Physical Confidence, Body and Strength sub-domains, respectively.

However, corrected item-total correlations for all groups were analysed ranging from 0.28 to 0.86, representing the contribution of each item to its subscale total. Several of these items presented a value lower than 0.45 suggesting that they were not functioning effectively on that particular scale. Globally the PSPPp present an acceptable internal consistency for the three factors model, stronger in female than in male groups, however some items may be eliminated, as they are not giving an important contribute to the internal factor structure.

4.3.4. - HIERARCHICAL STRUCTURE

The sub-scale interrelationships for the original model (Fox & Corbin, 1989) were analysed using zero-order and partial correlation coefficients, in order to determine the degree of support for the hierarchical structure among constructs with the wheelchair basketball players sample.

Table 4.6 - Correlation coefficients – wheelchair basketball players

	GSE	PSW	PHY CONF	BODY
	Sample D	Sample D	Sample D	Sample D
PSW	.18			
PHY CONF	.04	.45**		
BODY	-.03	.52**	.20	
STREN	.07	.48**	.28*	.40**

** coefficients significant at .01, * at .05

Correlation coefficients of the Portuguese wheelchair basketball players provide evidence for the proposed hierarchical organisation with Global Self-Esteem. GSE correlated more highly with PSW sub-domain than any other subscales at the base of the hierarchy, however that correlation is not significant. Each of the sub-domain scales showed a stronger relationship with PSW than with GSE as it was expected. This relationship supports the existence of PSW construct as a generalised outcome of perceptions in the three sub-domains but no evidence was not found for its functioning as a mediator between these sub-domains and GSE as no relationship was found between PSW and GSE scales.

This lack of significant relationship between the physical self and self-esteem is a very unusual finding and no similar situation has been reported in the review of literature, however most of the studies analysed were carried out in samples involving participants without disability. As this is the first time to use PSPPp in participants with physical disability, two possible explanations may be suggested to justify this lack of relationship. Either the instrument is not working "in the same way" in this group due to a lack of sensitivity or the physical self as measured here in not perceived as a key contributor to self-esteem in this particular group.

In spite of the weaker relationship among the three sub-domain scales when controlling for the PSW effects, partial correlation coefficients also showed that the relationship between GSE and the three sub-scales increase when the effects of PSW were statistically removed, providing further evidence against the idea that PSW might appear to function as a mediating variable between the three

sub-domains and GSE. Multiple regression analysis (*stepwise* method) revealed that the three sub domain scales (Body, Physical Confidence and Strength) were able to explain 44.4% of the variance in PSW for the Portuguese wheelchair sport athlete's population. However not all the sub-scales adequately represent self-perception content in the physical domain for this group of Portuguese wheelchair basketball players.

Table 4.7 presents correlation coefficients and partial correlation coefficients of the female and male basketball players without disability.

Table 4.7 - Correlation coefficients – basketball players without disability

	GSE	PSW	PHY CONF	BODY
	Sample E	Sample E	Sample E	Sample E
Female				
PSW	.70**			
PHY CONF	.66**	.77**		
BODY	.29	.29	.27	
STREN	.55*	.72**	.35	.38
Male				
PSW	.39**			
PHY CONF	.19	.53**		
BODY	.21	.54**	.36**	
STREN	.23*	.42**	.20	.36**

** coefficients significant at .01, * at .05

Correlation coefficients present further evidence for the proposed hierarchical organisation both in female and male basketball players without disability. GSE correlates higher with PSW than with any other sub-scale. On the other hand, all the PSPP sub-domain scales correlate higher with PSW than with GSE. Body does not seem to correlate higher with PSW than with GSE, however correlation coefficient values are 0.297 for PSW and 0.296 for GSE.

Table 4.8 - Partial correlation coefficients controlling PSW effects – Basketball players without disability

	GSE	PHY CONF	BODY
	Sample E	Sample E	Sample E
<u>Female</u>			
PHY CONF	.26		
BODY	.12	.08	
STREN	.09	-.47	.26
<u>Male</u>			
PHY CONF	-.03		
BODY	-.01	.11	
STREN	.08	-.03	.17

** coefficients significant at .01, * at .05

Partial correlation coefficients also showed that the relationship between GSE and the three sub-scales are almost extinguished when the effects of PSW were statistically removed, providing a support to the idea that PSW appears to function as a mediating variable between the three sub-domains and GSE in both groups.

Multiple regression analysis (*stepwise* method) revealed that two sub-domain scales (Physical Confidence and Strength) as independent variables were able to explain 82.6% of the variance for females and three sub-domain scales (Body, Physical Confidence and Strength) as independent variables were able to explain 46.0% of variance for male in PSW for the Portuguese students population.

4.3.5. - SAMPLE DIFFERENCES

Table 4.9 presents significant T-test results for PSPPp sub-scales and GSE for disability versus non-disability basketball athletes.

Table 4.9 – Significant T-test results for PSPPp sub-scales and GSE for basketball athletes with and without disability

		Levene´s Test		T-test		
		F	Sig.	t	df	Sig.
With/Without disab.	Body	.53	.467	-2.44	148	.016*
	Phy conf	6.77	.010	-2.36	110.44	.020*
	GSE	4.28	.040	-11.44	147.95	.000**

** significant at .01, * at .05

Non-disability basketball athletes scored higher than disability basketball athletes in all sub-domains and in GSE (table 4.1 and 4.2). Statistical differences were found for Physical Confidence and Body PSPPp sub-domains ($p < 0.05$) as well as for GSE ($p < 0.01$) between basketball players with and without disability. Wheelchair basketball athletes presented lower levels of Physical Confidence, i.e., confidence in their Sport Competence and athletic ability, in their Physical Condition, stamina and fitness as well as in their confidence to perform in sport and exercise environments. They also perceived lower levels of Body Attractiveness and satisfaction with their body as well as ability to maintain an attractive body and confidence in appearance.

Finally, wheelchair sport athletes presented major significant differences for Global Self-esteem. Mean score values between basketball players with and without disability showed that participants with physical disability perceive the opinions other people have about themselves and about their acting in a less positive way, i.e., there are much less confident with other people's personal judgements about their own attitudes and behaviour in daily life.

Table 4.10 presents significant analysis of variance (ANOVA) values for PSPPp sub-scales from Portuguese basketball athletes according to their disability versus non-disability status and their competitive level.

Table 4.10 – Significant analysis of variance (ANOVA) values for PSPPp sub-scales analysed according to the athletes competitive level

Comp. level		df	F	Sig.
With disability	Phy conf	1	8.29	.005**
Without disability	Phy conf	2	4.36	.016*
	PSW	2	7.57	.001**

** significant at .01, * at .05

Significant statistical differences were also found for Physical Confidence sub-scale ($p < 0.01$) between national and international basketball players with disability. National wheelchair basketball players presented lower mean score values for their Physical Confidence revealing that they are less confident with their athletic achievement, and with their sport and athletic ability as well as their level of Physical Condition, when compared with their international level colleagues.

Statistical differences were also found for Physical Confidence ($p < 0.05$) and PSW sub-scales ($p < 0.01$) in non-disability basketball athletes. Bonferroni Post Hoc Tests revealed that in Physical Confidence sub-domain these differences were between local and national athletes ($p = 0.013$) and in PSW the differences were between local and national athletes ($p = 0.001$) and between local and international athletes ($p = 0.003$). For all cases, higher competitive level athletes scored higher than lower competitive level athletes.

Table 4.11 presents results from analysis of variance (ANOVA) for PSPPp sub-scales from Portuguese basketball athletes according to their disability versus non-disability status and their frequency of doing sport.

Table 4.11 – Significant analysis of variance (ANOVA) values for PSPPp sub-scales for disability versus non-disability basketball athletes

Freq. doing sport		df	F	Sig.
With disability	Strength	2	4.43	.016*
Without disability	GSE	5	2.99	.016*

** significant at .01, * at .05

Significant statistical differences were also found for basketball athletes without disability for Global Self-Esteem between athletes training four times per week and athletes training seven times per week (p= 0.014). Athletes training more times per week scored higher than their colleagues training less time per week.

Among wheelchair basketball participants' significant statistical differences were found for Physical Strength (p≤0.05) between athletes doing sport two times a week and athletes doing sport three times a week (p= 0.029). Athletes doing sport two times a week presented higher mean score values than athletes doing sport three times a week.

Table 4.12 - Significant analysis of variance (ANOVA) values for PSPPp sub-scales for disability basketball athletes

		df	F	Sig.
Age group	GSE	2	3.53	.035*

** significant at .01, * at .05

Statistical differences were also found in wheelchair basketball participants for Global Self-Esteem (p≤0.05) between adolescents and middle aged adults (p= 0.05). Adolescents expressed a lower level of confidence and satisfaction about the positive or negative perceptions other people have about themselves or about their acting's than other mature and experienced adults. Gender differences were also found between basketball players without disability.

Table 4.13 - Significant T-test results for PSPPp sub-scales and GSE from basketball athletes without disability

		Levene´s Test		T-test		
		F	Sig.	t	df	Sig.
Gender	Phy Conf	.006	.938	2.18	84	.032*
	PSW	1.08	.303	2.23	84	.029*
	GSE	.140	.709	3.15	84	.002**
Age group[1]	Strength	.585	.447	-2.48	67	.016*
	PSW	1.55	.217	-2.35	67	.022*
	GSE	.194	.661	-2.95	67	.004**

** significant at .01, *.05

[1] Age group for this sample of Portuguese wheelchair basketball players has just two groups – adolescents (8-20 yrs.) and young adults (21-40 yrs.).

Females scored higher than males for all PSPPp sub-scales (tables 19 and 20) and differences were significant on Physical Confidence ($p < 0.05$) and PSW ($p < 0.05$), as well as in Global Self-Esteem ($p < 0.01$). These differences between females and males have also been reported for the all student samples however with males scoring higher than females for all PSPP sub-scales.

Significant statistical differences were also found for the male sample between adolescents (8-20 yrs.) and young adults (21-40 yrs.) groups, with older males scoring higher for Strength ($p < 0.05$) and PSW ($p < 0.05$) sub-scales, as well as for GSE ($p < 0.01$).

The period of adolescence is considered by many authors (Harter, 1999; Sprinthall & Collins, 1999), as a period of instability representing a dramatic developmental transition which involves pubertal and related physical changes, cognitive-developmental advances as well as changes on the individual's social expectations. One important acquisition for the understanding of self-perceptions during adolescence is based on the cognitive-developmental process that involves the emergence of abstract thinking, introspection and self-reflection. This ability moves self-perceptions into a new level of representation, the adolescent is able to differentiate his/her attributes into multiple and role-

related selves and allow him/her to express more specific self-evaluations of a multi-dimensional self. However this move may be also source of internal conflict and instability. The adolescent does not yet have the cognitive skills to integrate these different self-attributes into a coherent and consistent self-theory (Harter & Monsour, 1992), and as a result of this inability he/she will certainly experience a conflict over self-attributes in different roles that are seemingly contradictory. Self-perceptions during this period are less situation specific and probably source of confusion and stress.

4.4. - DISCUSSION

The major aim of this study was to investigate reliability and validity of the Portuguese version of the Physical Self-Perception Profile, the PSPPp, with Portuguese basketball athletes with and without disability and determine if this instrument is sensitive enough to assess their self-perceptions in sport settings. In the validation process support was provided to the three factors model previously suggested by Fonseca and Fox (2002), and Ferreira and Fox (2002b, 2003) for the Portuguese population. However, and in spite of the major portion of contents used to express general feelings of Physical Self-Worth arises from the three sub-domains used in the PSPPp, limited support was found in the wheelchair basketball players sample for the existence of PSW as a mediator between these and GSE.

Study two provided some critical information about PSPPp structure when used in groups with physical disability. The instruments factor structure seems to be different to the one largely confirmed in non-disability populations. A smaller structure was found with just two factors, Physical Confidence (as a agglutinating factor containing Sport and Condition sub-scales) and Body Attractiveness while Physical Strength is apparently excluded. The hierarchical structure exists among PSPPp sub-scales but not with GSE. This unusual lack of relationship between Physical Self-Worth and Global Self-Esteem raises two possible justifications. Either the instrument is not working properly in this group due to a lack of sensitivity or the physical self as measured here in not perceived as a key contributor to self-esteem in this particular group.

In spite of considering the physical part of their bodies as something relevant for their daily lives, Portuguese wheelchair sport athletes might consider that the physical self doesn't play a determinant role on influencing approval or disapproval attitudes towards their individuals believes about their own competence, significance or respectability, i.e., it doesn't influence much their individual degree of favourable perceptions of their own self. However, and considering study two findings no reliable answer is possible to explain any of these hypotheses confidently. Further research is needed, as there are several anomalies that require deeper investigation.

For the present dissertation, the questions raised by results from study two require the design of a third study, probably using a combining methodology approach to the one used in study two to find some justification for the anomalies previously described. Further contribution is needed to confirm or disconfirm the hypothesis that physical self-perceptions in the physical domain develop in an alternative way when assessed in groups with physical impairment involved in sport participation.

The second aim of this study was to test the hypothetical influence of a group of variables such as time of sport practice, frequency of doing sport and competitive level on the development of self-perceptions in the physical domain as well as of Global Self-Esteem, both in basketball athletes with and without disability. Comparison between the two samples supported the hypothesis that basketball athletes without disability would produce higher mean score values on the PSPP as well as on the GSE for both male and female sub-groups than wheelchair basketball athletes.

Significant statistical differences were found for Physical Confidence in female sub-group and for Body (marginal value) in male sub-group between athletes with and without disability. Disability sport athletes present a similar pattern to the one presented by other sport athletes without disability, however expressing lower intensity levels of personal confidence in Sport Competence and Physical Condition in females and Body Attractiveness and satisfaction with figure in males.

Portuguese wheelchair sport athletes present lower mean score values for GSE when compared with their basketball colleagues without disability (sample E) as well as with other sedentary groups without disability (samples B and C). In the first case those differences were highly significant ($p \leq 0.000$). Wheelchair sport athletes scored high values in Sport, Condition, Body and Strength, however these perceptions appear not to be seen as having an important influence over the Global Self-Esteem. These results are not in agreement with those found in the review of literature which support the idea that disability athletes present GSE mean score values similar to those presented by other athletes without

disability and higher in than those presented by other sedentary individuals without disability.

On the other hand, comparison between basketball athletes with and without disability and sedentary individuals without disability would support the hypothesis that basketball athletes would produce higher mean score values on the PSPP as well as on the GSE than sedentary individuals without disability. This hypothesis was not supported because male wheelchair athletes (samples D) present a lower mean score value for Body sub-domain when compared with male sedentary groups (samples C). One possible explanation for this might be that male wheelchair athletes perceive their Body Attractiveness more poorly than male individuals not doing any sport activity. Considering the importance attributed to appearance and image in today's society, physical impairment may have an important impact on the way people with physical disability perceive their bodies. Individuals with physical disability, in particular during late adolescence and early adulthood, may be more sensitive and critical about their physical appearance, especially during a period when their colleagues without disability value the shape and the size of their bodies in such a positive way. This pattern was not found in female wheelchair sport athletes probably because the Body is also a very strong source of stress and conflict, for sedentary female adolescents and young adults without disability during this period.

The third aim of study two was to test the hypothetical influence of time of sport practice, frequency of doing sport, and competitive level, as well as other disability specific variables such as lesion source, type of lesion, time onset of disability and functional classification on the development of physical self-perceptions as well as on Global Self-Esteem, in wheelchair basketball athletes. However, limited support was found for the hypothetical effects of these variables in the development of disability basketball athlete's self-perceptions in the physical domain as well as in Global Self-Esteem. Age group influenced GSE between adolescent and middle aged adult groups ($p \leq 0.05$). Frequency of doing sport influenced Strength sub-scale between athletes doing sport three times a week and athletes doing sport four times a week ($p \leq 0.05$). Athletes doing sport two times a week presented higher mean score values than athletes doing sport three times a week. This apparent unusual result is justified by the fact that the

majority of top Portuguese wheelchair basketball teams train only two times a week and compete during the weekends while other less competitive teams are training more than two times a week in order to try to reduce their competitive handicap. For this reason, and in spite of more experienced athletes are the ones doing sport less times per week, they are the ones who present higher perceptions about their Sport Competence and Physical Condition based on their previous sport experiences. Finally, competitive level influenced Physical Confidence subscale between national and international athletes ($p \leq 0.01$).

These results confirmed frequency of doing sport and competitive level as two important variables that should be analysed when studying the influence of psychological variables in disability sport and physical activity environments, as previously described in the review of literature (Campbell, 1995; Campbell & Jones, 1994).

Finally, gender differences were also found among basketball players without disability. Unexpectedly female basketball athletes scored higher than males for the majority of the PSPPp sub-scales and differences were significant on Physical Confidence ($p < 0.05$) and PSW ($p < 0.05$), as well as in GSE ($p < 0.01$). These gender differences have been reported for all student samples in study one giving support to the results found in the review of the literature involving other studies conducted with this instrument (Asci, Asci & Zorba, 1999; Fonseca & Fox, 2002; Fox & Corbin, 1989; Hayes, Crocker & Kowalski, 1999; Page et al., 1993). However in those studies males always scored higher than females for all PSPP sub-scales.

Two reasons may justify these findings. First, women who participate in national organised sport events tend to value their physical self as an important area in their lives as well as to have an important contribution to their global level of self-esteem. Why? Because due to the female low participation rate in sport events organised events those who participate tend to value their bodies in a different way. Secondly, these feelings are perceived with even greater importance in the particular case of elite female athletes as the ones found in sample E, as they were all competing in first division and in professional national leagues, where their body is daily confronted with perceptions and

feeling very much related with Sport Competence, Physical Condition, Body Attractiveness and Physical Strength.

Portuguese females present a low participation rate in sport events organised by national federations when compared with male. National data from all individual and team sports showed that there is a 1 to 8 ratio between the number of Portuguese female and male athletes participating in competitive organised sport events (Marivoet, 2001). Twenty four percent of the total Portuguese male sport participants are involved in events organised by national federations while only 7% of the total number of women participating in sport do so (Marivoet, 2001). However, women who participate in these sport events tend to value their physical self very much and tend to perceive the physical domain as something important in their lives as female athletes and, as having an important contribution to their global level of self-esteem. These feelings are perceived with even greater importance in the particular case of elite female athletes as the ones found in sample E, because as they are all competing in first division and in professional national leagues teams their body and their physical self plays an important role in their daily lives and future careers.

Study two revealed differences in PSPP sub-domains when assessing Portuguese wheelchair sport athlete's self-perceptions in the physical domain. Major differences were found in the factor structure with only two factor clearly defined - Body Attractiveness and Physical Confidence – when compared with normal able-bodied athletes. Differences were also found in the hierarchical organisation of the physical self in individuals with physical disability. An unusual lack of relationship between PSW and GSE never reported before in groups without disability was also found suggesting that further research is needed to analyse some of the questions highlighted by the instrument in this particular group. Results from PSPPp application suggest that in sport settings, disability individual's self-perceptions may be developing in an alternative way, using different key elements and different mechanisms than those previously identified among able-bodied athletes due to the specificity of the disability groups as well as to environmental and socialization conditions in which disability sport occurs. The link between study two and study three is based on

the need for a deeper and more detailed understanding of each one of the key elements as well as the role played by them on the establishment of physical self perceptions in people with physical disability.

CHAPTER V

STUDY THREE – DEVELOPMENT OF PHYSICAL SELF-PERCEPTIONS IN WHEELCHAIR SPORT PARTICIPANTS: A QUALITATIVE ANALYSIS

5.1. - INTRODUCTION

The impact of physical disability on the physical self is an important area of investigation that has received little attention in the research literature. As suggested in study two, the processes through which the different dimensions of the physical self are perceived in people with physical disability are possibly developed in a different way to those used by people without disability. Consequently, they warrant being the object of further analysis and inquiry. The current study, designed as a follow-up study, is a qualitative inquiry of the physical self and its sub-domains (Sport, Condition, Body and Strength) as well as on the Global Self-Esteem of adult wheelchair sport participants. Results from study two suggested that the Portuguese version of the Physical Self-Perception Profile was not sensitive enough to assess self-perceptions in the physical domain in wheelchair basketball athletes. These results also suggested that PSPP sub-domains do not express and describe the type of meaningful feelings experienced by wheelchair athletes towards their physical lives. Based on these results, the main research questions for study three were: Why is PSPPp not sensitive enough for the assessment of physical self-perceptions in the physical domain? Do self-perceptions develop in wheelchair sport participants according to a different pattern than the one described for people without disabilities? Which are the key elements contributing to self-perceptions in wheelchair sport participants?

In order to find answers for the previous research questions, two possible approaches are available: i) undertake a second quantitative study (QUANT2) using a different research instrument to find further quantitative support for the assessment of physical self-perceptions in the physical domain, in groups with similar characteristics, or ii) use a different paradigm approach, adopting a qualitative study (Qual).

The first approach would lead to the use of another quantitative instrument to assess physical self-perceptions in the physical domain. However, this approach does not seem to be the most appropriate. PSPPp is one of the world widest instruments used to assess self-perceptions in the physical domain, and based on this assumption, to look for a more specific instrument to assess the self-perceptions in the physical domain is not the best choice because any other instrument would probably be even less sensitive for this specific group.

An alternative and more suitable approach for the present study would be based on a qualitative paradigm approach (Qual). Several reasons may be presented to justify this alternative approach: First, the QUANT study generated by the PSPP revealed a "faulty picture" of self-perceptions in the physical domain. Clearly there are instrumentation problems with this population. It appears that wheelchair athlete's self-perceptions in the physical domain are constructed based on different feelings from those assessed by PSPP in groups without disability. The quantitative study (Study two) suggested that although there may be some similarity in salient content of physical self-perceptions to an able-bodied population, there may be other issues not tapped by the PSPPp. Also the links between physical self-perceptions, PSW and self-esteem were not typical of other populations previously studied, suggesting the possibility of different mechanisms and processes at work. A study is needed that will return to open ended responses (as suggested by Fox, 1991) to investigate the content and structure of the physical self in individuals with physical disability. There is a need to describe the story lived by people with physical impairment, the way they have lived and experienced it, in order to understand these differences and to look for in-depth meaning and explain diversity. It is important to listen to "what" they have to say about their feelings for their physical selves, the way they say it and "how" they feel them.

Qualitative research provides an opportunity for people to express themselves. Writing (QUANT) in itself can be sometimes stressful and the nature of questionnaires is to limit the range of possible responses. The use of a research approach (Qual) based on talking might be favourable to the way people express their own feeling and thoughts about themselves and about the way they see and understand things on their lives.

Based on this rationale the purpose of this study is to understand and explain how physical self-perceptions develop in sport participants with physical impairment. To explain this difference the researcher has to look for complexity, ambivalence and contradictions in accounts. This will allow him to find arguments to explain something that QUANT results showed clearly, the theoretical model of self-perceptions is not fully supported in wheelchair sport athletes. Limited internal validity as well as reliability was found for PSPPp with this particular group. One possible way to achieve that is through understanding and explaining the reality of the individuals. This will establish a new relationship with "Knowing" and through this relationship to provide the basis of a) different self-perception content that is salient to the physical self, and b) adjustments to the original theoretical model underpinning the structure of the PSPP.

5.2. - METHODS

In qualitative research, data collection and analysis is viewed as an interactive process whereby the researcher switches between the relevant literature and the data (Miles & Huberman, 1994). Although no consensus exists for determining the best method of qualitative data analysis (Creswell, 1998, p.140) some analysis strategies are suggested. Strategies such as reading through all collected information (Tesch, 1990) and writing memos and reflexive notes, the translation of participant's ideas in metaphors, reducing the data, the display of information, tables or graphs in order to visualise information and the reduction of data into categories, are some examples of frequently used strategies in qualitative research data analysis (Creswell, 1998). For the sake of clarity, data gathering procedures and data reduction and interpretation are presented separately.

In the present research, a study of the self in the context of disability sport, a particular method of analysis was used borrowed from principles of case study design. A thematic interview approach was adopted to focus on the constituents of the physical self. The use of the case study tradition depends on three conditions: i) the type of research question, ii) the control an investigator has over actual behavioural events, and iii) the focus on contemporary as opposed to

historical phenomena. They are the preferred strategy when "how" or "why" questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context (Yin, 2003, p.1).

The use of principles of case study design supported by thematic interviews as a research strategy for the present study, is seen as an empirical inquiry that investigates a contemporary phenomenon within it's real context, especially when boundaries between phenomenon and context are not clearly evident (Yin, 2003, p.13). According to the same author, the case study method would be used when we deliberately wanted to cover contextual conditions, believing that they might be highly pertinent to the phenomenon in our study.

5.2.1. - SELECTION OF PARTICIPANTS

Results from study two pointed for the need to use a qualitative approach to look for a better understanding of the mechanisms and key elements of physical self-perceptions development in individuals with physical disability. In spite of the major difficulties found in PSPPp at sub-domain level and it's lack of psychometric clarity and sensitivity to express and describe the most meaningful feelings perceived by this group, both Physical Self-Worth and Global Self-Esteem seem to be functionating well at the top of the model. It seems to be the content for each PSPPp sub-domain scale that is problematic and how the content relates to more global constructs.

A cluster analysis was used to group participants according to their different levels of perceived Physical Self-Worth and Global Self-Esteem (table 5.1).

Table 5.1 – Frequency table for the cluster analysis

	Frequency	Percent	Cumulative Percent
Cluster 1	22	34,4	34,4
Cluster 2	11	17,2	51,6
Cluster 3	23	35,9	87,5
Cluster 4	8	12,5	100,0
Total	64	100,0	

Participants from study 2 were grouped in four clusters providing contrast between the different dimensions of their perceived experience: cluster 1 – "wheelchair sport participants with low Physical Self-Worth and Global Self-Esteem profile", cluster 2 - "wheelchair sport participants with medium Physical Self-Worth and Global Self-Esteem profile", and cluster 3 - "wheelchair sport participants with high Physical Self-Worth and Global Self-Esteem profile". For the sake of clarity individuals from cluster 4 were not selected for interview considering that if high PSW is not followed by high or moderate self-esteem or vice-versa then it is likely that other elements outside of the physical self are dominating.

There are no clear guidelines about the number of participants to include in a qualitative research interview study. The number of subjects depends on the purpose. In similar published research, the number of interviews tends to be around 16 ± 10. This number of interviews is usually a result of a combination of the time and resources available for the research but primarily because 'saturation' of content was achieved, according to the law of diminishing returns (Kvale, 1996). For the present study, it was decided to have a minimum of four individuals from each self-perception cluster identified in study two.

Participants were selected for interview and recruited by phone, aiming to provide further support to characterised the lived stories experience by each one of the cluster types, based on the following criteria:

1. Type of Physical Self-Worth and Global Self-Esteem profile according to one of the three selected clusters.
2. Willingness and availability to participate in the interview. Many participants expressed their unavailability to participate in the interview with higher incidence in participants with low Physical Self-Worth and Global Self-Esteem profiles.
3. Age. An effort was made to select participants representing different age groups in order to get a broader range of reported experiences.
4. Duration of sport involvement. An effort was made to select participants with different length sport careers in order to get a broader range of experiences.

5. Competitive experience. An effort was made to select participants with different sport levels in order to get a broader range of experiences.

The final sample was achieved selecting a similar number of participants from each one of the three clusters. It is important to have a balanced range of study participants in order to represent the various dimensions of experience (Rubin & Rubin, 1995), and achieve multiple meaningful views of the described phenomena. However, one of the interviews had to be excluded because it was interrupted due to interviewee personal reasons unrelated to the purposes of the study and it was not possible to reschedule. On the other hand, some difficulties were found in the availability of members from cluster 1 for interviewing. Due to these two reasons cluster 1 has three members interviewed while clusters 2 and 3 have five members interviewed each. A sample of fourteen individuals was selected to ensure that critical cases were chosen for the interview and confirmed their availability to take part in the study. For those who accepted interviews were booked.

5.2.2. - INTERVIEW PROCEDURES

Fourteen semi-structured in-depth interviews lasting between 25 and 60 minutes were carried out with participants. These focused on understanding the nature and origins of different individual feelings; opinions and thoughts related to the development of the physical self and how this relates to Global Self-Esteem. Given the results of study 2, and the lack of psychometric clarity of the PSPP subscales with this population, particular attention was drawn to the content of their subscales in order to confirm or disconfirm their salience and validity with this population. This method was used because of our interest in the subjective perceptions and experiences of our informants.

According to Yin (2003), the case study questions are the heart of the method and the main function of the questions is to keep the researchers focused on their task. In the present study these questions were developed in the thematic interview guide based on the different dimensions of the physical self, assessed in the PSPPp as well as in the Global Self-Esteem. In the qualitative data analysis these dimensions were used as pre-established higher order themes or

categories of analysis (see table 5.2). The last category, other themes, is an open category specially created to include other different issues mentioned by the participants during the interview, especially when the closing interview question "Do you have anything more you want to bring up or ask about before we finish the interview?" was asked.

Table 5.2 – Pre-determined categories for the interview data analysis

Data analysis categories (Higher order themes)
• Physical Self (PSW) • Sport Competence (Sport) • Physical Condition (Condition) • Body Attractiveness (Body) • Physical Strength (Strength)
• Self-esteem (GSE)
• Other themes

The first three interviews were carried out in Portuguese language as pilot interviews, due to the researcher's lack of qualitative research interview expertise. These interviews were performed as an intensive training for interviewing skills (Kvale, 1996). However, initial interviews and field notes were later included in the main study, as it was felt that they provided useful information about the themes in analysis.

A semi-structured interview guide was developed for the purposes of this study. In constructing the questions to generate personal meanings, the researcher drew on the main categories of content identified in the PSPPp. Descriptions of the physical self found in the review of the literature for people with physical disability were also used in order to understand the different ways in which these sub-domains are perceived in this particular group. These particular meanings might, on one hand, give additional information about the different sources of physical self-perceptions as well as establish some differences about

the different processes through which these constructs are perceived in people with and without disability.

It was important though to maintain a high degree of open-endedness in order not to restrict participants and encourage important content to emerge that may be critical to the self-perceptions and self-esteem of this population. Interview questions in the guide were tested during the three pilot study interviews to determine the appropriateness and clarity of the questions and showed a good adequate content to the aims of the study. Only minor changes were needed. Interviews were all conducted by the same person. They consisted of open-ended questions and were standardized to maximise consistency and allow all participants to be asked the same questions in the same way. However freedom was given to the participant to introduce different issues or content and scope was allowed for different questions to be posed according to the course of the interview. Non-directive probes were used for clarification and elaboration of the questions while paying attention not to influence the content of answers.

All responses were tape-recorded with the interviewer attempting to communicate a neutral, non-judgemental perspective with regard to the respondents' answers. All participants could refuse to answer any question or terminate the interview at anytime. Ethical issues were also considered with the researcher protecting the anonymity of the informants. These procedures are common practice among qualitative researchers (Creswell, 1998; Kvale, 1996).

5.2.3. - DATA ANALYSIS

The decision to use principles borrowed from the case study design as the best research strategy for the present study was supported by two premises. First, the main purpose of our study was to find an answer to questions such as "how" wheelchair sport participants perceive themselves in the physical domain, "how" and "why" do they differ from similar groups without disability. Second, that purpose is focused on a contemporary phenomenon, i.e., disability as a social phenomenon within a real-life context based on the everyday lived experiences of the interviewees, their personal opinions expressed the way they lived them and they way they understand them.

Stake (1995) advocates four forms of data analysis and interpretation usually used in case study analysis. The first is categorical aggregation where the researcher seeks a collection of instances from the data, hoping that issue-relevant meanings will emerge. The second form is direct interpretation, where the researcher looks at a single instance and draws meaning from it without looking for multiple instances. A third form is seeking patterns in the data and looking for correspondence between two or more categories, and finally the naturalistic generalisations developed from the data analysis, generalisations that people can learn from a single case or from applying it to a population case. In Creswell's opinion another step should be added, the description or the "facts" of the case, which involve a detailed view of aspects about the case. (Creswell, 1998, p. 154).

In the present study data analysis and interpretation was achieved using the four forms of data interpretation described by Stake (1995), but summarised through the narrative. In the present study data analysis and interpretation was achieved using different forms of data interpretation to organise personal narratives for each one of the interviewees. Cohler (1982) refers to personal narratives as "the most internally consistent interpretation of presently understood past, experienced present, and anticipated future" (p.207). The narrative approach is perceived as an important tool for the interpretation and reconstruction of individual's own life stories. As MacIntyre (1981) suggests, "we all live out of narratives in our lives and because we understand our own lives in terms of the narratives we live out, and if those narratives are appropriate to understanding the action of others. Stories are lived before they are told, except in the case of fiction" (p.197), meaning that the experience of "telling" is perceived as very helpful to understand life.

5.2.3.1. – Developing narrative using the cognitive concept-mapping technique

A diagram for each narrative was developed based on interview transcripts and analysed using an adaptation of *cognitive mapping* technique (Wiginton, 1999; Bellis & Grimley, 1999). Each diagram or *map* highlights the major concepts mentioned by each participant during the interview. Larger boxes represent more meaningful themes as they were expressed during the interviews, i.e.,

major ideas and feelings expressed by the interviewees to characterise each one of the higher order themes in analyses. These ideas are the key elements through which wheelchair sport participants perceive the different sub-domains of their physical self. Smaller boxes express arguments and additional ideas used to justify those themes. The relationships between the themes are an expression of the researcher's reflexivity and interpretation. Larger arrows represent stronger relationships between themes or ideas, according to the intensity and the direction expressed by the interviewees. Bi-directional arrows express interrelationship and a mutual influence of both themes in analysis.

Cognitive concept mapping technique can be a useful technique as it provides the researcher a broader view of the themes under analysis as well as a useful tool to organise and make sense of the flow of material from the research interviews. Cognitive concept mapping technique also provides the reader a schematic visualisation of the major themes and ideas transmitted by each one of the participants about each sub-domain of the physical self as well as about the Global Self-Esteem.

Summary tables containing lower order themes were also used to condense individual information from each thematic interview narrative. Similar tables were used for both cluster and cross-cluster discussion in order to provide further visualisation for repeatability or diversity of the major themes between clusters.

5.2.3.2. - Reliability and validity

> *"The key issue becomes whether the relevant community of scientists evaluates reported findings as sufficiently trustworthy to rely on them for their own work".*
>
> *(Mishler, 1990)*

After defining the most suitable approach for data analysis to be used in the present study, the issues of *repeatability*, *transferability* and *corroboration* were addressed. In the present study the unit of analysis was each one of the interviews using an "interpretive-descriptive" approach (Maykut & Morehouse,

1994), in which the main focus is on the description of what the researcher has understood based on the information provided by the participants to reconstruct a "recognisable reality" for the participants (Strauss & Corbin, 1990). However, the researchers own interpretations are also entwined into the analysis based on personal *reflexivity* as well as on *transferability* and *generalisability*. Major themes and ideas expressed by the interviewees are interpreted by the researcher based on a reflexive attitude over the context in which the "stories" are told. But the researcher also needs to know whether the findings of his study have any larger import or are transferable to other contexts (Miles & Huberman, 1994), i.e., if those findings are generalised to a broader audience, with similar characteristics to the one he has studied.

When questions are raised about reliability, the underlying issue is whether the process of the study is consistent, reasonably stable over time and across researchers and methods. What is being questioned here is "quality control" (Goetz & LeCompte, 1984; Smith & Robbins, 1984), is some notion of stability and whether things have been done with reasonable care (Miles & Huberman, 1994).

Two other major questions are raised concerning validity. The first involves truth-value (internal validity). Do the findings of the study make sense? Are they credible to the people we study and to the readers? But probably the most important question to be asked is: Do we have an authentic portrait of what we are looking at? The answers to these questions involve concepts such as *credibility* and *authenticity* of the study.

The approach for the present study was based on Kvale's (1989) emphasis on validity as a process of checking, questioning, and theorising, not as a strategy for establishing rule-based correspondence between our findings and the real world. Validation becomes the issue of choosing among competing and falsifiable explanations.

The second question concerns external validity and the need we have to know whether the conclusions of a study have any larger import - whether they are transferable contexts (Lincoln & Guba, 1985), or how far can they be

generalised (Miles & Huberman, 1994). The answers to these questions involve the concept of *transferability* of the findings. These findings can be transferred and applied at different levels: into theory, practise or experience.

The concept of trustworthiness (Guba, 1981; Lincoln & Guba, 1985; Maykut & Morehouse, 1994) essentially asks two major questions: To what extent can we place confidence in the outcomes of the study? Do we believe what the researcher has reported? A detailed description of the research process and outcomes, i.e., detailed information about purpose and methods as well as about the results lays the research process open for readers and provides them with a basis for judging the credibility of the study. Therefore trustworthiness is seen as a subsidiary of credibility. A deeper look into the sample selection and into the specific procedures for data collection and analysis will contribute to establishing a level of trust in the reported outcomes. A richly detailed report is an essential requirement for qualitative researchers who, as a group, have been criticised for being unclear about research methodology (Maykut & Morehouse, 1994). The trustworthiness of the present research findings was increased through the use of different procedures previously described for data collection and data analysis. Four further aspects of the research process (Lincoln & Guba, 1985) made an important contribution to trustworthiness in the present study:

- Multiple methods of data collection – Combination of interviews and observation from the field, along with reviews of relevant documents increase likelihood that the phenomenon of interest is being understood from various point of view and ways of knowing (Maykut & Morehouse, 1994). Convergence of a major theme from different sources of information brings strong credibility to the findings. In the present research, field notes involving complementary information about an individual's disability as well as video recorded data from twenty-two wheelchair basketball games were used as complementary sources of information for a better understanding of the disability sport settings.

- Building an audit trail – Employing the methods previously described for data collection and data analysis in the present qualitative research

project is, in Lincoln and Guba´s (1985) opinion, the best approach to have a permanent audit trail for the research.

- Working with a research team – Qualitative researchers are sometimes criticised for their work for being susceptible to single and perhaps biased interpretation. One way of increasing trustworthiness is to work with others as a research team. However, a PhD is often an individual endeavour, with limited resources and sometimes it is not always possible to achieve team input. An alternative in this study was to use an outsider colleague to walk through the audit trail raising questions of bias. Periodically narratives were shared with different PhD students, all involved in qualitative research, and quotes were discussed in order to confirm interpretation and avoid bias.

- Member checking – This process consists of asking participants to confirm that the researcher has accurately described in their interpretation their experience, producing a recognisable reality in their view. This procedure was used with the three pilot interviews where participants were asked for feedback expressing their opinion about the interview transcriptions as well as the following draft for the narratives. To date, it has not been possible with the remaining transcriptions as well as with the final interpretations because geographically, participants involved in the study are located all over the country.

5.3. - FINDINGS

Participants ranged in age from 20 to 55 years with a mean age of 34.08 ± 11.92 years. Nine participants were single, four were married and one lived in a de facto relationship. All participants had a significant level of physical impairment. Acquired versus congenital type of disability was not analysed in this study due to the considerable difference between these two types in the original sample, 54 individuals had acquired disability while only ten had congenital disability. For two participants the disability had been present for less than four years, while for two others disability had been present between four and ten years. Ten participants reported disability for more than ten years. The most common disability experienced by the participants was amputation (6), however other disability types such as polio (5), spinal cord injury (2) and tendon shortening (1) were also reported.

Due to the extensive length of the thirteen thematic interviews included in study three, the personal narratives from each thematic interview are presented in the appendix section (appendices K, L and M, volume 2). This allows the dissertation to comply with length restrictions while allowing the reader to investigate the responses in greater depth and detail. The cross narrative analysis and the cross cluster discussion includes results from all the narratives used in the study.

5.3.1. - CLUSTER 1 – "WHEELCHAIR SPORT PARTICIPANTS WITH LOW PHYSICAL SELF-WORTH AND GLOBAL SELF-ESTEEM PROFILE"

The three members from cluster 1 ranged in age from 23 to 34 years. All participants were single. For two participants disability was acquired while for one it was congenital. For one individual disability has been present for more than ten years, while for the other two disabilities has been present between four to ten years. In cluster 1 the most common disability was amputation (two participants) while the other had polio. Two participants were doing sport for five to ten years while the other was doing sport for 2 to 4 years but recently stopped doing it in a competitive way.

Mark (pseudonym) is a 23 year-old single male university student with an acquired physical disability since he was 17 years old. Mark suffered an amputation below the knee in his right leg and went through a very difficult phase just after the accident. He refers to that period as *"a very problematic phase"*. Mark was bad to his parents and closer relatives as his behaviour was changing all the time. He was always complaining and used to fell revolted and depressed with the accident. Then he joined the basketball team and he realised he was not the only one with impairment. He quickly realised that all his other mates with disability were living their own lives and doing many things he never imagined they could do, even those who had a more severe level of impairment. Meeting new people, interacting with them, and playing made him feel better and more able to face his disability with a positive approach. He has been playing basketball for five years and since then he thinks his life has improved a lot.

Zack is a 23 year-old single male working as a cashier in a petrol station. He got an acquired physical impairment caused by a bi-lateral amputation of both legs above the knee when he was 14 years old, however he does not like to talk much about it. Zack started doing sport when he was 15 years old. Now he is training for wheelchair basketball once a week and playing on the weekends and he is also doing athletics, 100 and 200 meters track wheelchair racing.

Patrick is a 34 year-old single male who is very active and concerned with disability issues as he is the local president of one of the major disability associations in Portugal. Patrick has an acquired physical disability, caused by polio when he was five years old. Since then his life changed extensively but he seems happy with it. He is a computer expert working in the main city hospital and he feels pleased with his life. During the interview Patrick expressed a different view of the issues under analysis to that expressed by other cluster 1 members. His main idea is that the physical self is not important to him because it mainly relates to physical appearance and the physical aspects of the body and that is not a major issue to him.

5.3.1.1. - Cross-narrative analysis and discussion for cluster 1:

In order to investigate the value of an overall characterisation the members of cluster 1 - wheelchair sport participants with low Physical Self-Worth and Global Self-Esteem profile – a summary of the main ideas and feelings expressed by the participants for each dimension will be presented.

Physical Self-Worth

Cluster 1 participants' opinion about their physical self is characterised by diversity rather then similarity of ideas in the lower order themes. Criticism over the body and disagreement among members about the main elements perceived as relevant to assess people's opinion about their physical self are some of the main ideas expressed. Some participants in this cluster are not happy with the physical part of their selves or perceive it as not relevant to their Global Self-Esteem.

As an example, Patrick expresses his opinion about his body considering it as an issue of minor interest. This idea about the body is justified by the fact that he acquired disability at a very young age, when he was five years old and learned to live and accept all the changes that occurred in his body. Basically, Patrick does not remember having a different body so it is normal to him to feel ok with his body, and he feels he does not have to please anybody else with it:

> *"I feel OK with my body ... when you asked me about the changes I would introduce if I could, I immediately thought none. In fact I was proposed to have a surgery to correct my scoliosis and my parents decided not to have it, however I wouldn't have changed their decision if it was today ... it was too risky and ... that's not my approach ... I feel I don't have to change things in order to please others* [external appearance] ... *however I believe that if my disability was acquired later in life it would have been much more difficult to cope with it and accept it ... the fact that it was early in life influenced a lot the way I accept my body, my feelings and level of satisfaction with it".*
>
> *(Patrick: Interview 14)*

The main aspects of his physical self are not critical to his existence or his sense of overall worth. He is more occupied with his psychological than physical self:

> *"I just want to feel psychologically ok and if I achieve that ... it overcomes the importance of the physical part we are talking about* [Body] *...that division* [in elements] *doesn't make sense from my point of view".*
>
> *(Patrick: Interview 14)*

Patrick considers that the physical part of the body is important but not fundamental, he has a *"global view of the body* (holistic view), *it's an all, it's not possible to split in parts"*, so there are no parts or elements to identify. On the other hand, Zack is critical about the physical part of his body and he feels a little unhappy with it. He thinks he *"has too much weight"*, and that influences performance. However, Zack perceives *"the muscles and the Physical Condition as other important elements of the physical self"*, but he is confident with these elements and feels ok.

Physical Confidence (Sport Competence & Physical Condition)

As mentioned in study 1 with a Portuguese university student population, the members of cluster 1 use similar feelings to express their opinion about their Sport Competence and Physical Condition. Participants from this cluster express themselves through feelings about Physical Condition, stamina and fitness as well as about Sport Competence and athletic ability because they understand and perceive the improvement of physical fitness through sport and through personal involvement in sport environments. They do not distinguish between sport or athletic competence and conditioning. This gives further support to the conceptual confounding suggested in study 1, of these two constructs suggesting that separate subscales are not relevant to their life experience. Participant comments, which feature confidence in what their body is capable of support the need for a new unique dimension, called Physical Confidence.

Participants from cluster 1 present a set of similarities in the lower order themes used to express their feelings and their opinions about their Physical Confidence i.e., about their self-perceptions related with athletic achievement, involving perceptions of sport and athletic ability, level of physical condition and fitness as well as confidence in sport environments and exercise settings. All the members of cluster 1 perceive their Physical Confidence through feelings from different lived sport experiences. These experiences involve places, events or

competitive sport situation where they experienced variable feelings (positive or negative) about their Sport Competence, Physical Condition or capacities of their bodies to respond adequately, and represent important steps in these individual's lives. Most participants also feel proud about their Physical Confidence and the process of acquiring confidence is also important for the way they perceive themselves as well as for the way significant others see them. Mark expresses these ideas when he refers to other's opinions about his Sport Competence and suggests that they are very important to him; *"I take people's opinion into consideration and try to improve"*. Confidence is expressed in a public arena under conditions where others can approve or disapprove. He feels happy with his Sport Competence and he remembers some situations where he felt good about it:

> *"First was the call to the national team, it was very important to me ... and I realised I had value as a player ... the second one was when we won for the first time against APD Sintra, we had never won them before and we realised we were improving ...".*
>
> *(Mark: Interview 3)*

These situations provided new important feelings: *"before it was always a defeat feeling, even before we start playing, now we know we have the chance to win, we have done it before so let's play the game and do our best"*. Zack also remembers some situations where he felt particularly proud of his Sport Competence:

> *"The first time was when I was called to the track and field national team. Unfortunately I had a surgery and was not able to go ... and the second was when I was called to the wheelchair basketball national team, first to the youth team and recently to the A team".*
>
> *(Zack: Interview 5)*

He still feels emotionally flooded when he tries to express the feeling he perceived and experiences during those moments, they were unique. It was a mixture of joy and pride.

Most participants from this cluster also believe that through sport they obtain health benefits. One of the participants, Patrick, is exclusively interested in his sport for this purpose, however others are also interested in acquiring and

developing new sport skills, both technical and tactical, in order to improve their sport performance.

In Patrick's opinion Physical Condition *"is quite important for daily life"*. Through sport he is *"able to acquire a more stable state of humour* [psychological stability] *and a positive well being* [stress release and relaxation], *difficult to achieve in any other daily activity"*. However, he does not perceive doing sport as something public, to show to others, he rather prefer to see *it "as a moment of fun that has health benefits ... but when people start focusing their attention to scores or performance everything changes"*. In Zack's opinion *"a good Physical Condition is important for health issues"*, in particular cases such as *"people like Mike where a good Physical Condition helps to minimise the effects of the impairment"*. However, Zack's disability is different from Mike's and not so related with secondary health complications. Both Zack and Mark identify the need to improve some technical skills, however Mark recognises that sometimes it is difficulty to learn these new skills, *"sometimes I doubt whether I am able to do it on not ...I am afraid to get lost in the game"* reflecting a momentary loss of sense of competence .

Body Attractiveness

The members of cluster one are also similar in their feelings about their Body Attractiveness i.e., about their figure or physique, and about their ability to maintain an attractive body and confidence in their appearance.

Two of these participants have negative feelings about their body. These feelings include lack of confidence with their bodies, overweight and a view of not being sexy and attractive. Some participants also expressed feelings of shame about body appearance and a desire to hide their disability. Zack who perceives his body as not attractive at all gives a good example: *"It is overweight and has too many scars, and so it cannot be sexy"*. Zack never felt proud of his body appearance, however he never felt any shame either:

> *"When I go to the beach, I take my clothes and my prostheses off, ... if people don't want to see it, just look somewhere else! People's reaction doesn't inhibit me."*
>
> *(Zack: Interview 5)*

On the other hand, Mark still feels reluctant to talk about his impairment to others, he feels inhibited and insecure about the way others will react. He is not sure if other people's attitudes towards his body would change if they knew about his disability. Probably people would look at him and perceive his Body Attractiveness in a different way:

> *"I know that the other person will not know, it is not visible but I know it is there and if I talk about it I think things will be different and that's difficult. Even with my girlfriend it took me two or three months to tell her I have impairment, she new through other people ... my level of confidence drops a lot and that's difficult to me, I feel insecure with my Body. I think there will be implications in the way I interact with others, I feel segregated ... It's not that they have a different approach ... I feel inhibited and I don't have the courage to tell them ... I feel bad about it and I rather prefer them not to know because they will feel more comfortable with it".*
>
> *(Mark: Interview 3)*

Participants with acquired physical disability in this group experienced a big difference in appearance before and after the accident but also consider that physical appearance is not important. Mark feels much better now about his Body Attractiveness than after the accident: *"My girlfriend gives me a lot of support but after the accident ... it was very bad ... I felt no motivation, a huge lack of confidence ... it was a very difficult time"*. However, Mark does not yet feel totally comfortable with his body. Before the accident he liked to go to the beach, now *"with my clothes on people cannot notice my impairment but when I use the shorts, people look ..."*. It took time to overcome the situation: *"just after the accident I used to go to the beach and keep my trousers on, now I got loose and I am able to put my shorts on and go for a swim ... it's improving"*.

Finally, the majority of participants from cluster one consider that the best approach to their lives is to accept the new reality, to accept disability and learn to live with it the best way they could:

> *"When I joined the team I met other people with disability that were OK with themselves ... and I saw I was not the only one, and the best thing to do was to face that situation (disability) and try to overcome the barriers, try to do things the best I could".*
>
> *(Mark: Interview 3)*

Zack also thinks that people with disability have to learn to live the way they are and not the way they would like to look in their dreams: *"I would like to be thinner but that's not a major issue to me, I accept the way I am ... that's something peacefully accepted and I feel quite OK with it"*.

These members from cluster 1 tend to interpret the impact of their physical disability through appearance and through the changes impairment produced in their bodies. This impact is reinforced by other people's attitudes towards their physical appearance producing important influence in the way this group perceives their physical selves.

Physical Strength

Some similarities in the lower order themes are also used to express personal feelings and opinions about cluster one participant's perceptions of Physical Strength i.e., about their muscle development and confidence in different situations requiring strength. The main ideas expressed by these interviewees show that most of them experience positive feelings about their Physical Strength and particularly pride. Zack feels happy with his Physical Strength because his body *"responds positively in all the situations that require strength, both in sport and in daily life contexts"*. He remembers once when he won a half-marathon competition and was two minutes faster then the Portuguese National Champion. He felt very proud of himself, it was a unique moment, he felt speechless and he was so happy that he didn't know what to do. These feelings were expressed in a particular competitive sport situation such as the half-marathon and have to be understood in the context of Portuguese disability sport twenty years ago. In those days, athletes competed in the marathon using common wheelchairs, which were very heavy and not suited for participating in disability sport events. Strength (endurance strength) was very important at that time, wheelchair pushing technique or aerobic capacity were each perceived as minor issues.

Additionally, most members from this cluster perceive Physical Strength as something important for the way they perceive themselves as persons. For example, Zack perceives that Physical Strength is very important to him because

"I am able to use my wheelchair anywhere and don't need help from anyone". However, he considers that Physical Strength is not so important for the way that others see him and interact with him. However, *"some friends with disability already told me that they would like to have a body like mine".* Mark also feels that strength is important to him because *"it is always important to know our limits in life, sometimes people think they are able to do things and they aren't"*, although people should keep trying until they are able to do it.

Finally, Physical Strength is perceived as important for daily life situations, giving people with physical disability greater autonomy to live their lives. Mark's opinion about his Physical Strength is good and based on his *"comparison with significant others"*, however he doesn't feel particularly proud of it, probably only when he feels that he can be helpful to others (his parents) in daily life tasks. On the other hand, Zack thinks *"people with physical disability should feel confident about their Physical Strength because that's very important for them both in sport as well as in daily life situations".*

Self-esteem

Members from cluster 1 expressed their personal feelings about their self-esteem and how, if at all, their sport daily life experiences and how they live their disability affects it. For example, Zack expressed his personal feelings about his Physical Confidence through his lived sport experiences and the important influence they had over his self-esteem:

> *"All these experiences (sport) were very important, now I am a more confident person, before I was afraid to do things, now not anymore. I try to do them, if I am able ... good, if I am not able ... also good however I do not give up trying!"*
>
> (Zack: Interview 5)

This is how people usually talk about their self-esteem. They talk about pride, about their fears and weaknesses, expressing positive and negative evaluations about themselves in different contexts of the physical self and in particular situations involving their bodies. Participants from this cluster did say a lot about feeling good as a person. They talked about personal achievement, about the importance of other's judgements, and also expressed their general feelings whenever they were able to get beyond their bodies and value other areas rather

than the physical self. As an example Mark perceives other people's opinion as very important and motivating to improve his self-esteem:

> *"I guide myself based on what significant others tell me, if I am attractive, if I play well, if my Physical Condition is ok, I take that in consideration when I am trying to reach my purposes ... other's opinion is very important to me ... I use that as a reference in order to improve and to achieve my aims".*
>
> *(Mark: Interview 3)*

Considering that members from cluster 1 were classed by the instrument as low physical self and low self-esteem participants they expressed very positive feelings and opinions about themselves quite frequently. However, several reasons may justify this positiveness. First, it is important to keep in mind that members from cluster 1 are, as all the other participants in study three, sport participants and that self-perceptions may be modified through exercise as it may provide the type of mastery challenge that can help individuals with disability go beyond their limitations and to achieve higher levels of performance than those achieved before (Sherrill, 1997). These effects are perceived both in competitive and non-competitive contexts such as sport events or daily life situations, as people feel encouraged to move forward under what might be considered as challenging conditions. Second, low self-esteem people are more reluctant and less able to change their self-concept and less like to experience self-enhancement (Fox, 1997) however, they are usually not entirely negative and do say positive things (Baumeister, 1993) about themselves as expressed in some of the quotes selected to illustrate this cluster.

Finally, another reason for holding such positive feelings about themselves might be because all the members from this cluster have already, in their own way, accepted their disability, learned to live with it and try to overcome that situation through restoring the "entrenched self" that locks the individual into their past body-self relationship (Charmaz, 1987). This process may occur in various contexts involving the non-disabled and disabled aspects of the total self, as previously suggested for individuals with spinal cord injury (SCI) (Yoshida, 1993).

Other themes

This particular dimension includes issues presented by the participants in response to the closing interview question "Do you have anything more you want to bring up or ask about before we finish the interview?" was asked. This category is characterised by diversity rather than by similarity of feelings and personal ideas involving different themes such as personal attitudes towards disability and disability sport needs. The main ideas expressed by Patrick are concerned with an individual's personal attitudes of acceptance and denial of disability. In Patrick's opinion *"there are different ways for people with disability to react towards impairment"* and these different types of reactions have an important influence on people's future lives:

> *"First there are those who completely reject what happened to them, usually they are revolted people who are never available to participate in any project and ... refusal is their traditional attitude. Then there are those who accept disability but they are also split in two sub-groups, those who really accept and think that what is done is done, now they have to look for a new life, a new life to be lived, and those whose acceptance is no more then a call for attention".*
>
> *(Patrick: Interview 14)*

On the other hand, Zack feels the need to use this open opportunity to call for further support and attention for disability sport and for disability sport athletes. After all, in his opinion *"disability sport athletes are the ones who bring home better results, more medals and lift high the name of Portugal all over the world, when compared with other Portuguese athletes without disability competing in the Olympics".*

These feelings of pride are a call for value and recognition. The issue here is not the sport itself, its not the medals or the results, it is the pride expressed in "fighting the cause of disability", it is the pride of doing relevant achievements in life, it is a question of social recognition and respect, which is perceive as very important as an alternative route for people's with disability self-esteem improvement.

Table 5.3 presents a summary of the main low order themes expressed by participants from cluster 1 for each physical self-domain produced through the concept-mapping process. Members from cluster 1 were critical about their

Physical Self-Worth and about its main components, as they perceive their bodies from a holistic perspective where the identification of the specific components of the physical self is hard to achieve. The Physical Strength domain is a good example. The lived sport experiences, the positive feelings of pride about their Sport Competence and Physical Condition and significant other's opinion about themselves are the key elements through which cluster 1 participants perceive their Physical Confidence. However, they are not very confident about themselves and about their ability to perform certain tasks, particularly in stressful competitive environments. Cluster 1 participants when involved in these specific situations frequently report lack of confidence and fear.

Some participants even tend to avoid competitive settings because they consider that competition is not a priority in their lives, they rather prefer a different approach to sport and exercise, more associated with health and recreational environments. However, this may also reflect their inferior ability to coping with these stressful situations:

> *"Through sport I am able to acquire a more stable state of humour* [psychological stability] *and a positive well being* [stress release and relaxation], *difficult to achieve in any other daily activity. However, I do not perceive sport as something public, to show to others, I rather prefer to see it as a moment of fun that has health benefits ... but when people start focusing their attention to scores or performance everything changes".*
>
> *(Patrick: Interview 14)*

Members from cluster 1 also present a low opinion of their Body Attractiveness and about their capacity to keep their body attractive and sexy. In the particular case of the two participants with acquired physical disability, body appearance is a key element for this dimension and much importance is attached to the differences perceived before and after their accidents. These individuals do not entirely accept their bodies yet. They are still struggling with themselves and with a new reality, and sometimes feelings of shame, desire to hide and intolerance towards the body are still a reality. A different approach was expressed by the other participant with congenital physical disability who ignored the importance of his bodies, reporting that his attention is focused on other important aspects rather than the physical self. A common reaction

towards these differences, in both cases, is to consider that physical appearance is not important. The major source of difference regarding the physical self is based on the different level of acceptance and coping with physical impairment and with disability.

Table 5.3 – Summary of the main lower order themes expressed by members of cluster 1

Lower order themes	Higher order themes	General dimensions
Focus on: • Criticism over the body • Disagreement about the main elements of physical self • Holistic view of their bodies	Physical Self-Worth	All three groups (N=14)
Focus on: • Lived sport experiences • Variable feelings about Sport Competence and Physical Condition • Pride of their Physical Confidence (Sport Competence & Physical Condition) • Important for the way they perceive themselves • Important for the way significant other's see them • Health benefits of doing sport • Acquiring new sport skills (technical and tactical)	Physical Confidence (Sport Competence & Physical Condition)	Cluster one: Participants with Low Physical Self-Worth and Global Self-Esteem Profile (n=3)
Focus on: • Negative feelings about their body (lack of confidence, overweight, not sexy) • Difference in body appearance before & after the accident • Physical appearance not important • Accept the new reality (body with disability)	Body Attractiveness	
Focus on: • Positive feelings about their Physical Strength	Physical Strength	

• Pride • Important for the way they perceive themselves • Important for daily life situations		(Continue) All three groups (N=14)
Focus on: • Physical Confidence influence • Physical self influence	Global Self-Esteem	Cluster one: Participants with Low Physical Self-Worth and Global Self-Esteem Profile (n=3)
Focus on: • Personal attitudes of acceptance and denial towards disability • Further support for disability sport	Other themes (Personal attitudes towards disability) (Disability sport)	

5.3.2. - CLUSTER 2: "WHEELCHAIR SPORT PARTICIPANTS WITH MEDIUM PHYSICAL SELF-WORTH AND GLOBAL SELF-ESTEEM PROFILE"

Participants

The five participants in cluster 2 ranged in age from 20 to 45 years. Four of these participants were single and disability has been present in their lives for more than 10 years. Three participants were engaged in sport for eleven or more years, one for 5 to 10 years and another was participating for 2 to 4 years.

Vince (pseudonym) is a young 20 year-old single male student, very friendly and thoughtful. His physical disability is congenital, caused by a shortage in the foot tendons, and he has been involved in wheelchair sport for the last four years. His international sport career is just beginning as he was recently called for the first time to the Portuguese wheelchair basketball national team.

Malcolm is a 45 year-old single male, friendly and with an extensive life experience both in Portugal and France where he lived and worked. Malcolm has an acquired physical disability, caused by an amputation when he was 18 years old. He has been involved in wheelchair basketball since he was 26 years old, in France where he started to play. He is also a coach.

Ernest is a 34 year-old single male, with the profession of typesetter, very active and open to sharing his life experience. Ernest has a congenital physical disability caused by a spina bifida that affected his lower limb and hip mobility. He has been involved in wheelchair basketball for 15 years but during this period he also trained for swimming and athletics, in particular wheelchair half marathons. Ernest is one of the most experienced Portuguese wheelchair players with several calls to the Portuguese national team and has been invited to play in the Spanish professional league.

James is a 22 year-old single male student, very active and talkative. James has a spinal cord injury (SCI) caused by a car accident when he was 18 years old. The accident caused him spinal cord damage at L1-L2 level with important range of motion limitations both for trunk and arms. He became involved in disability sport one year after the accident, before he had his second operation that "fixed" his spinal cord and stopped intensive pain. He has played for two

years but during this period he also tried other different outdoor sports such as skiing, karting and water bike riding. In spite of his limitations, James is not happy with his achievements, so he always wants more, new targets, testing new limits, overcoming them and establishing new ones of greater complexity and difficulty.

Geoffrey is a 42 year-old married male, and father of a young daughter with extensive experience in disability sport. Professionally, Geoffrey is a security supervisor in a big hospital and he is very proud of his job. He considers that practicing sport had made a major contribution to his ability in his present professional position because it has enabled him to keep fit as well as to develop leadership skills useful to accomplishing his tasks. Geoffrey had polio since he was one year old. He was born into a working class neighbourhood in Lisbon, surrounded by other kids of his age with whom he used to play on the street. This friendly environment probably explains why he never stopped doing the same things as other kids. Since then he has always been very active, considering his physical limitations. Geoffrey is very proud of those friends because they never abandoned him in any of their adventures or games. They never treated him in a different way, never asked him if he was able to do it or not, they always assumed he would do it, he was *"always seen as one of the group"*. In his opinion this probably made him a very confident person. Geoffrey has been involved with wheelchair sport for more than 27 years. He is probably the most experienced international Portuguese wheelchair basketball athlete. Geoffrey is also a successful wheelchair basketball coach. His team has been Portuguese National Champion for the last three years.

5.3.2.1. - Cross-narrative analysis and discussion for cluster 2:

Members of cluster 2 - wheelchair sport participants with medium Physical Self-Worth and Global Self-Esteem profile – expressed a set of personal ideas and feelings about the different dimensions of their physical self as well as about their Global Self-Esteem.

Physical Self-Worth

Members of cluster 2 present many similar ideas about the content and importance of elements of physical self-perceptions used to express their Physical Self-Worth. The majority of interviewees feel very confident about themselves and perceive their Physical Self-Worth through positive feelings about their bodies. Unlike cluster 1 members there is a general absence of feelings of inferiority or shame due to their impairment; Vince mentioned that he has never had major problems with accepting his body, has never felt any inferiority complex because of his impairment, and has always felt confident about it:

> *"Since I was a child, I always did the same things others did, ... never felt inferior to others, always played together with them, ... and never felt any inferiority ... I know I have an impairment, which might cause me some difficulties, some limitations, but it is not so serious, ... it is not because of it that I feel different from others, I know it is visible, I am aware of that but I can help others the same way others can help me".*
>
> *(Vince: Interview 1)*

Other participants from this cluster have reported similar experiences. Malcolm also mentioned that he *"never felt any complex about his body or felt the need to hide anything about his impairment"*. Ernest feels OK with the physical part of his body. He is used to it since he was born with a disability and he never felt any problems with it, he *"feels happy with his body because it is his body, it's the only one he has"*. Finally, James thinks that his body provides him with very *"positive and pleasant feelings and he feels quite happy with it"*.

Some members of this cluster perceive their bodies holistically. Ernest considers that *"the body is an all and all parts are important ... the body is a group of limbs, organs, systems... you cannot split it"*. However, if he had the chance he would like to change some things in his body, he would be much happier if he could increase flexion of the hips and legs. This would allow him to increase his autonomy, to be able to dress himself and put his shoes on, as well as to walk without crunches. James also perceives the physical part of his body *"from a global approach"* (holistic). In his opinion his body gives him freedom sensations and allows him to do different things in spite of the barriers imposed by society to those with disability.

Some other participants perceive their bodies through positive feelings and benefits of taking part in sport. Competing in sport is frequently mentioned as an important achievement in the lives of people with disability. As an example Malcolm thinks that involvement in sport makes people feel OK and more available to talk about their bodies: *"doing sport leads them to that attitude"*. He also considers that training once a week and playing on the weekends is too little for big changes in his physical self. However, it is enough for him to keep the sensation of feeling good when involved in any kind of physical daily activity (walking, climb stairs in the wheelchair). On the other hand James, who competed in sport all his life, needs to do it to *"waste energy and to feel fulfilled"* otherwise he feels a lack in his life.

Physical Confidence (Sport Competence & Physical Condition)

The importance of sport is reflected in the feelings of participants from cluster 2 about their abilities and fitness in the sport setting. This includes their Physical Confidence, their self-perceptions related to their athletic achievement, their sport and athletic ability, level of Physical Condition and fitness as well as confidence in sport environments and exercise settings.

All members in this cluster perceive their Physical Confidence through feelings about their training conditions and time spent in training. Most talk freely and in positive terms about their level of Physical Condition, stamina and fitness as well as their sport and athlete abilities. They express positive feelings about their Sport Competence and Physical Condition and a strong desire to improve. As an example of the different training conditions and their implications, Vince mentioned that in spite of *"always giving the best during training"* and *"trying to get the best advantage of training sessions"*, he recognises that other teams have a lot more hours of weekly training than his team.

On the other hand, his call to the national team *"was completely different from what he used to do during training"*. In spite of all the differences in intensity and duration of each training session, his *body "was able to react and adapt to that new situation very quickly"*. Malcolm is critical about his Physical Condition, *"it is very far away from what I would like it to be"*, and to feel good about it *"I need training at least 3 or 4 times a week"* as before. Then it would

be possible to feel again the same feelings he had before *"when at half time I usually felt physically stronger than in the beginning of the match"*.

Ernest expressed positive feeling about his Physical Condition. He is used to playing most of the game without being replaced and at the end he feels OK.

> *"I remember a tournament we did in Badajoz (Spain) where we lost the game, we lost it for many points, but we left the field exhausted because we gave everything we had. The other team won because they had to win, they were stronger and there was not much we could do ... if we gave everything and the others won it was because they were better. In those situations people should feel happy because they played their part and no one can ask for more ... there are other situations when we loose and leave the field and with the feeling that we could have done better, those are the moments where we should feel annoyed".*
>
> *(Ernest: interview 6)*

But Ernest is also critical about his sport and athletic ability. He would like to be better and he compares himself with other foreigner basketball players he has played against. In his opinion it all depends on the different training conditions given to both:

> *"Some teams are training twice a day, we train twice a week ... that's a huge difference, no possible comparison... some international players with a similar classification score as mine are much better prepared, and if they are I could be. It's just a matter of training, we don't have the same training conditions they have".*
>
> *(Ernest: interview 6)*

James has a more positive view, he feels happy about his sport and athletic ability, as well as his confidence in sport environments considering that he has been training in wheelchair basketball for just two years. He has *"still a long way to go in order to achieve higher competence and performance"* so he needs more hours of training to improve. Another good example is Geoffrey who would like to have a better level of Physical Condition but considers that training conditions are poor, for example *"this year we can only train twice a week because the sports hall is not available for more"* he argues and after 27 years sometimes he feels tired, disappointed and lacking the motivation to do more than he already does.

Three participants from cluster 2 provide strong examples of how their Physical Self-Worth and self-esteem can be derived through their sport experiences. For example, during his short sport career Vince experienced moments when he *"felt particularly proud of his Sport Competence"*. These moments might involve personal achievements such us the recent call to the Portuguese national team, or other team achievements such as the games his team played against much strong opponents and won. These situations are very important to him because:

> *"It is in these moments that we know if we are able to overcome a certain barrier that till then it was really very difficult for us ... and these moments are very relevant, if we feel ok with what we are doing, we will feel better with ourselves. That provide us with a different approach to things ... it improves our general feelings, we see things more clear and feel stronger to continue forward".*
>
> *(Vince: Interview 1)*

These experiences are perceived as important to him as well as to significant others because *"if I feel ok with myself, I transmit that to others ... and if they feel that I am OK that will have some influence on them"*. Malcolm reported another good example, when many years ago in France he felt very proud of his Sport Competence:

> *"It was not even a prize, it was a game I did with 5000 people watching. We went by plane, I had never been in a plane before, and I played and played for a long time that day ... I was feeling very confident and fulfilled, felt very proud as an athlete ... felt proud of so many people watching me playing, and it was a good game, we lost but it was a very balanced game till the end ... and it was a very pleasant sensation".*
>
> *(Malcolm: Interview 4)*

Finally, James feels happy and proud to achieve new challenges with his body. He constantly tries to test himself doing different sport activities:

> *"Three years ago I went to a ski school for people with disability and after two hours I was skiing without any support from the instructor. That made me very proud of myself. Another good example was my first kart competition, a 24-hour event, and my body coped very well with it. I also like to ride my water bike and I frequently fall into the sea. I am able to get back on it just using my arm strength. That may not look much but considering that I am a paraplegic ... it makes me feel good about it".*
>
> *(James: Interview 11)*

It is interesting to see that some of the examples expressed by members of this cluster are about reflected appraisal, i.e., doing well in front of others in particular others without disability, some about ego comparison and some about doing better and achieving tasks. Sport is perceived here as a important arena where people with physical disability can test their abilities to perform better, compare themselves with others without disability and reinforce the ego through their personal sport achievements.

Body Attractiveness

The members of cluster 2 also express their feelings and opinions about their Body Attractiveness. For most this produces positive self-perceptions. For example Vince said, *"... About my body, I don't have anything against it because I always tried to feel well with myself, that's very important"*. Some items of the questionnaire talk about *"people that feel embarrassed by their bodies"*. This argument is perceived as a very useful to describe Vince's feelings about his body. He never felt any problem with the way his body looks but considers that other people with disabilities might have those problems, especially *"when they have to wear few clothes"*. For example, to go to the beach was something that never bothered him, *"always went to the beach with my friends ... usually I go with people I know but if anyone else that I don't know goes, it is something that does not bother me"*. However, he agrees that for other people with physical disabilities it might be a very constraining situation that may originate feelings of inferiority.

In spite of no particular feelings of pride over his body Ernest feels it as attractive. He does not find many reasons to say that his body is attractive and beautiful, however he considers that *"it's beautiful because it is mine, if I don't like it, who will?"* A theme emerged that importance of Body Attractiveness was overstated in society. The idea that people's core is more important than physical appearance is a robust idea mentioned by the majority of elements from cluster 2. For example, Vince recognises that first opinion about the appearance of his body may be negative and influence their overall judgement of him. However, he does not have any *"difficulty in accepting other people's*

opinion", and he thinks that those superficial opinions, frequently negative, may very quickly be changed when people have the chance to know him better:

> *"If they are people with whom I frequently related with ... those people will realise that it is not really like it looked, it could be much better than at the first sight ...".*
>
> *(Vince: Interview 1)*

Ernest also thinks, *"it is not only the physical part of the body that is important, but that people's interior* [core] *is also important"*. However he thinks there are not many chances for people to know him better because "... *people don't talk to us ... they are afraid ... we are just different ...nothing more"*. So appearance for him acts as a serious barrier through its impact on others and the way the perceive and interact with him.

Finally, Malcolm considers that *"a person without disability who becomes disabled keeps his feelings about the physical part of his body"*. However, other people very frequently change their opinions and feelings about someone else's body when he/she becomes disabled:

> *"Before being disabled I experienced many situations where there was no problem ... after disability many people show that there is a problem ... they show that there is a problem in the way they express their feelings because I have a physical impairment".*
>
> *(Malcolm: Interview 4)*

Disability can therefore work as a barrier through appearance, *"as an obstacle in the first encounter, when people don't know each other and don't trust each other ... we can feel the difference in 80 to 90% of the situations ...but in a second phase other values are involved and many of the first impressions disappear because ...people are more than the physical part "*. These obstacles may negatively influence relationships:

> *"After experiencing those situations where we perceive that other people are being hesitant we also take a step backwards and that turns the relationship even more difficult ... it's a question of self-defence, not to hurt but to protect ourselves".*
>
> *(Malcolm: Interview 4)*

On the other hand, some members from cluster 2 consider that their body is not attractive to others and that there is no possible comparison between their bodies and other body models socially imposed in magazines and TV.

In spite of no particular feelings of pride over his body Ernest feels it attractive; *"it is attractive because it is my body"*, however to others he feels that *"it is obviously not attractive"*. He doesn't have any *"difficulty to accept other people's opinion"* about his body, even if their opinions are negative. He seems to maintain this position even though he bases his Body Attractiveness on comparisons with other people without disability, *"we look to other people and look to ourselves and I know ... nobody is equal, there are always aspects that might be seen as positive or not, all depends on how other people see us ... and on the way they interact with us"*. However, he does not have major complains about other people's attitudes and regards interaction as a positive experience:

> *"I don't have many difficulties in interactions with other people ... and when someone comes and talks to me, someone I don't know or someone I met recently ... and talks to me in a very special way ... I feel proud of the good impression I caused in that person. That has already happened to me and it is something that makes me feel very well with myself, to see that someone is proud of what I do and of how I am".*
>
> *(Ernest: Interview 6)*

Ernest's opinion about the appearance of his body was a problem to him before, however not anymore. He changed his mind, *"if people don't like* [the appearance of my body] ... *just look somewhere else!"*

Vince feels that he does not conform to the standard comparisons people make about their body with others, He *"always kept the same physical shape, the same weight", so that* Vince feels very happy with his body when compared with the "ideal body", and is pleased with the parameters he established for judging his body because:

> *"The ideal body is not born like that, needs a lot of work, a lot of exercise, needs a lot of care to keep it that way ... needs diets and a regular exercise practice not to lose fitness. I always ate whatever I wanted, never took special care with my body and I am able to maintain its shape without any special concerns".*
>
> *(Vince: Interview 1)*

Conversely, Ernest compares his body with the *"perfect and ideal bodies"* from the magazines and from TV. He feels it is impossible to establish any comparison because they are completely different. The appearance of his body was before a problem to him. He would avoid going out with friends, to public places because people would be staring at him. His body is different, it looks different and that is a source of curiosity or displeasure for others. Recently he changed his mind. He decided that other's opinion is not important to him so there was no reason not to be happy and if people do not like the appearance of his body they will have to get used to it or just turn their faces and look somewhere else.

The main feelings expressed by participants from cluster 2 confirm Body Attractiveness and Appearance as an important and meaningful issue for the way people with physical disability perceive themselves in the physical domain. The key elements expressed in this cluster confirmed the importance of disability acceptance or refusal as a major contributor for the way people with disability perceive their bodies and cope with them. In opposition to cluster 1, cluster 2 members present positive feelings about their Body Attractiveness as they feel that they cope OK with their bodies and feel pleased with them. Feelings of revolt, denial and unhappiness with the body are not expressed in this cluster as they were in cluster 1. However, members from cluster 2 still perceive their bodies as not attractive to other's confirming a common idea among people with physical disability that the core is more important than physical appearance when concerns to initiating new relationships between people. In their opinion physical appearance is important for the establishment of the first encounters in a more spontaneous basis. However, the core is what really matters to maintain those encounters in a more regular basis.

Physical Strength

Interviewees in this cluster show that they experience positive feelings about their Physical Strength and wish to improve Physical Strength due to its importance both in sport and daily life situations. Vince's feelings about his Physical Strength and the main elements he takes into consideration to establish his level of satisfaction with his Physical Strength are based on the

comparison he establishes with other people's strength, particularly the way he perceives his ability or not to equal the amount of strength he assumes other people have. He feels that allows him to understand his Physical Strength limitations very well and he says that:

> *"In term of Physical Strength I am able to produce higher levels of endurance than power strength* [explosive strength]. *I know that from my body, ... for example, during the game ... I start the game feeling physically well but by the end of the game I am still able to perform physically almost at the same level ... of course there is always a small loss ... people always feel a bit physically tired but I am able to maintain a good endurance level. Even by the end of training sessions, after all that physical effort, I am still able to maintain that rhythm, go into attack and come back into defence as in the beginning of the session ... when it concerns the need for speed, using strength in short distance sprints, that's not my best!"*
>
> *(Vince: Interview 1)*

Vince feels very proud of his Physical Strength. That feeling was recently felt during the National Team training stage when he had to cope with high intensity training sessions and a couple of sessions after he felt his body adapting to that kind of effort which made him very confident with it.

> *"If I had to train for a week at that intensity, I think I would improve even more ... the fact that I felt my body adapting and improving made me believe that with work and training my physical fitness may improve even more ... that's very good for me, makes my self-esteem improve".*
>
> *(Vince: Interview 1)*

For Malcolm, Physical Strength was never a problem. However when he was 20 or 30 years old things were a bit different, he had more strength and more confidence to overcome physical barriers. Now training once a week he feels different. The major differences felt between now and then is in the game during the second half when he feels less strong than at the start, but feels he probably does not need to feel it because he plays in a different way *"using less the strength and more the brains"*. On the other hand, Ernest does not feel happy with his Physical Strength. He would like to have more strength and he could if he had the chance to do some specific training.

> *"Strength is important for speed ... and in basketball strength is important for shooting, specially three points shots ... I saw foreign players with one classification point shooting three points shots ... here we don't do it ...and that means that they were able to improve their strength ...they have training sessions twice a day and one of them is strength in the gym."*
>
> *(Ernest: Interview 6)*

Strength is very important to James. It allows him to overcome obstacles in his daily life, especially when he needs to climb the sidewalks or to avoid the holes in the street. The lack of strength *"makes people like him dependent on someone else"*. James feels his strength is OK. He would like to improve it but he would need more intensive training and at the moment that is not possible. Good levels of strength *"make wheelchair users independent and autonomous"*, however James never felt inhibited and always tried to do everything. He always tried to test his capacities, to establish new limits and to overcome those limits and establish new ones.

As any other person, Geoffrey has his *"own dreams and ambitions"*. He would like to be a very capable and strong athlete; he would like to have a stronger trunk without any scoliosis problem, and no problems in his left arm in order to maximize his performance during the game. However *"things are not like people want and those limitations are real"*, but even though he basically accepts them, he wished he could be better than he is.

Global Self-Esteem

Personal feelings about Global Self-Esteem are not directly mentioned among members of cluster 2. Some participants in this group provide ideas that suggest a relationship between different dimensions of the physical self (Physical Self-Worth, Sport Competence, and Physical Strength) and Global Self-Esteem. However these relationships were, in general, expressed in passing and it is difficult to interpret the extent to which individuals are aware of any connections. Often expressions of pride about elements of the self provide some insight, however most thoughts and evaluative opinions about Global Self-Esteem occur in the context of the physical self. As an example, Vince expressed some relationship between Physical Strength and Global Self-Esteem when he said that he was very proud about his Physical Strength because of his body

ability to adapt to different exertion situation, and that feeling made his self-esteem improve.

On the other hand, Ernest is quite overt about this connection and thinks that the feelings he has about his body (Physical Self-Worth) have an important influence over his Self-esteem, the way he feels about himself: *"If I don't like myself, who will?"* Finally, James thinks that other people's opinion about his Sport Competence is important to him. Usually the feedback he receives from others are good and he finds this motivational and this increases his Self-esteem. It seems that for him, the approval of others is an important mechanism for feeling better about himself. These relationships between constructs suggest that Physical Self-Worth has an important role as a mediator between more specific situation sub-domains and Global Self-Esteem.

Other themes

This dimension is characterised by diversity rather than by similarity of feelings and personal ideas about disability issues. The main themes presented were i) social negative attitude towards disability, ii) people's with disability attitudes towards society, iii) physical and psychological empowerment, iv) segregation, v) lack of information and knowledge about disability, vi) prejudice, and vii) people's with disability personal attitude towards impairment. Due to the importance of some of these issues in the context of the disability studies literature and their potential to influence overall self-esteem it is worthwhile looking into the narratives and making a deeper interpretation of their content.

In Vince's opinion people with disabilities should try not to develop a negative attitude towards impairment. The best approach is to *"accept impairment and learn how to use it in a positive way"* in order to empower the physical as well as the psychological domains. From this point of view, Vince identifies sport as a good vehicle for helping in this process:

> *"Sport is essential to a person's life ... we feel our levels improving, we feel more confident, we feel a higher self-esteem, we feel more proud about ourselves, and that makes us more secure when relating with others ... and makes people see that, in spite of our impairment, we are able to over come it ... showing that we are ok with ourselves ... and that makes people feel well".*
>
> *(Vince: Interview 1)*

On the other hand, Geoffrey thinks that people's attitude towards disability issues is still a taboo. Frequently people with disability are segregated by able-bodied individuals due to a lack of information and knowledge about disability:

> *"People don't know much about disability but speculate about it and make us feel the difference that none of us would like to feel ...it's just a physical thing ... the difference exists in the eyes ... in the physical appearance ... because after all everything else is the same ".*
>
> *(Geoffrey: Interview 12)*

Geoffrey also thinks that people with disability should fight more to try to modify the minds and the ideas of those individuals usually mentioned as "normal":

> *"That requires just a bit of understanding because the difference is on their eyes not in us ... we have to show people that things are quite different ... we like to receive the same things other people without like, because we have a difference but it's just a physical difference, it doesn't mean that we are different".*
>
> *(Geoffrey: Interview 12)*

On the other hand, common people should also try harder to understand disability, understand the difficulties people with disability face in their daily lives because:

> *"Disability, and in particular physical disability, is something easy to acquire over life and if they face that reality they would be better prepared to face life. Disability is not the end of the line - people don't need to whish they were dead. Many people with disability have a normal life, I have my job, I have my family, my kids, I like myself and the way I live, I have a super normal life ... and I have a disability, I have a difference but that difference is not in my eyes, it is on the eyes of those who see me ... people just have to treat me like I am and stop showing that difference at anytime. The most harmful thing for a person with an impairment is that others are constantly showing him that difference".*
>
> *(Geoffrey: Interview 12)*

Prejudice and segregation towards people with disability are frequently felt in professional environments particularly in issues related with job and career. They are constantly relegated from supervision positions in most situations due to prejudice, and Geoffrey felt it for a long time:

"The manager of the hospital where I work once came to me and said something that shocked me a lot: Geoffrey, she said, I could make you security supervisor but what would happen if the main Director calls you? If he calls me I go and meet him without any problem, I replied. But what she meant was that when I get there he would realise that the security supervisor of the hospital he runs is a disabled person ... and we cannot have a disabled person as a security supervisor in a hospital".

(Geoffrey: Interview 12)

Geoffrey sees this as *"a serious educational problem that should be worked out at schools"*. Why not to talk about an issue that *"may happen at anytime in peoples lives and provide people opportunities to interact with other people with disability and face their problems and difficulties"*, and be better prepared for life?

Expressions and feelings such as "segregation", "lack of knowledge about disability", and "prejudice" are supposed to have negative effects over cluster 2 individuals self-esteem, as they feel frequently ignored or under evaluated both in educational, professional and social settings. However, a two way effect in self-esteem is found for these individuals as they increase their confidence in themselves and their ability to overcome problems and difficulties both in sport and daily life. This is a good example of growth throw adversity mechanism, avoiding the development of negative attitudes, accepting impairment and learning how to use it in a positive way, as well as struggling to modify other people's ideas and taboos about disability imposed by society.

Table 5.4 presents a summary of the main lower order themes expressed by members of cluster 2 - wheelchair sport participants with medium Physical Self-Worth and Global Self-Esteem profile. Participants from this cluster present a much more positive approach to their body and to life in general when compared with members from cluster one. Most of the individuals from cluster 2 present positive feelings about their Physical Self-Worth, as inferiority or shame are not common feelings among members from this cluster. Important differences in physical appearance are perceived among participants of cluster 2, particularly in shape and size of their bodies but those differences are perceived in a positive way. However some members of this cluster confirm the

idea that people's core is much more important than Body Attractiveness probably because they feel their bodies as not attractive to others.

A clear difference is found between cluster 1 and 2 members concerning Physical Confidence. Cluster 2 members are more confident and positive about their Sport Competence and Physical Condition (Physical Confidence). These participants are more confident about themselves in sport and exercise settings and in competitive stressful situations as they wish to improve their skill in order to improve performance.

As previously found for cluster 1, pride is also a common feeling among this group. However cluster 2 individual's positive feelings about Physical Self-Worth, Sport Competence and Physical Strength, as well as individual's attitude to exercise and sport is something that makes the difference between these two groups. Cluster 2 individuals feel more confident with themselves and much better prepared to face daily life.

Table 5.4 – Summary of the main lower order themes expressed by members of cluster 2

Lower order themes	Higher order themes	General dimensions
Focus on: • Positive feelings about the physical part of the body • Holistic view of their body • No feelings of inferiority or shame • Benefits of doing sport • Difference in physical appearance – shape and size	Physical Self-Worth	All three groups (N=14)
Focus on: • Training conditions and time spent in training • Positive feelings about Sport Competence and Physical Condition • Desire to improve Physical Conditions and performance • Lived sport experiences • Pride • Attitude in the game • Acquiring new skills (technical and tactical) • Benefits of doing sport • Significant other's opinion important and motivating • Similar feelings about Physical Condition before & after the accident • Physical Confidence not important to other's • Achievement through sport and exercise	Physical Confidence (Sport Competence and Physical Condition)	Cluster three: Participants with high Physical Self-Worth and Global Self-Esteem profile (n=5)
Focus on: • Positive feelings about Body Attractiveness • Peoples core is much more important than Body Attractiveness	Body Attractiveness	

(Continue)

- Body not attractive to other's
- No comparison with bodies from magazine and TV

Physical Strength

All three groups (N=14)

Focus on:
- Positive feelings about Physical Strength
- Desire to improve Physical Strength
- Important to daily life situations

Global Self-Esteem

Cluster three: Participants with high Physical Self-Worth and Global Self-Esteem profile (n=5)

Focus on:
- Physical Self-Worth
- Sport Competence
- Physical Strength

Other issues
(Attitudes towards disability)
(Attitudes towards society)

Focus on:
- Social negative attitudes towards disability
- Attitudes towards society
- Physical and psychological empowerment
- Segregation
- Prejudice
- Lack of information and knowledge about disability
- Disabled people attitudes towards disability

5.3.3. - CLUSTER 3 – "WHEELCHAIR SPORT PARTICIPANTS WITH HIGH PHYSICAL SELF-WORTH AND GLOBAL SELF-ESTEEM PROFILE"

Participants

Participants from cluster 3 ranged in age from 23 to 55 years. Three participants were married, one single and the other was living in a de facto relationship. For most members disability has been present for more than ten years. In this group the most common disability experienced was amputation, however other disability types such as polio and spinal cord injury were also reported. Most of the elements from this cluster have been involved in sport for eleven or more years while for others it has been for 5 to 10 years and for 2 to 4 years.

Mike (pseudonym) is a 52 year-old single male, very friendly and with an extensive life experience. Mike has an acquired physical disability, caused by a spinal cord injury (SCI) at dorsal level at 20 years old. He has been involved in wheelchair basketball for the last 16 years. However he was already a very experienced wheelchair marathon runner with several international competitions in his curriculum before he started playing basketball. He is also involved in other sport events such us parachute jumping and kart races. Mike is a very talkative person; his long experience with disability sport (he was one of the "pioneers" from the eighties) gives him the possibility of advising many other young athletes. His team is very young and he is proud of that because he feels that he has been able to bring many young people into sport and develop some good and healthy habits. Mike is a very popular person.

Charles is a 40 year-old married father of four children, and is very cooperative. Charles acquired a physical disability, caused by polio, when he was eleven months old. All his life he has been dedicated to disability sport as he his considered together with Mike as one of the pioneers of disability sport in Portugal. Charles was probably the most experienced wheelchair marathon runner in Portugal with several national titles between 1988 and 1994. He was an eclectic sportsman as he was also involved in swimming, wheelchair basketball and table tennis national competitions. Some years ago he decided to focus his attention just on playing basketball and now he is training twice a week and playing on the weekends. However, he misses the old times when he trained everyday and competed during the weekends, sometimes in different

sport competitions. In spite of Charles' very respectable position in the disability sport arena in Portugal, he is a realistic talkative and cooperative person, available to share his life sport experience and to talk about himself and about the pride he feels from what he has represented in the past and how people see him nowadays.

Peter is a 30 year-old married father of a little boy, and also very talkative and friendly. Peter received an acquired physical disability, due to a limb amputation caused by a train accident when he was still an adolescent. However, before that happened he already had serious burns in his legs and he remembers very clearly the feeling he had about his body at that time. Peter's experience with disability sport began shortly after the accident when a group of people from his present club went to his school and invited him to start doing sport. In 1990 he was a gold medal winner in the European Swimming Championships, however he also tried other sports. For four consecutive years he was Portuguese javelin champion and he is still the national record holder for this discipline. Some years ago Peter gave up athletics and swimming, and decided to focus all his energy on playing wheelchair basketball. His team was Portuguese National Champion for two years but in the last three years they were not able to win the title. He is training twice a week and playing on the weekends, but he still remembers the old days when he was training almost everyday.

Ralph is a 23 year-old single male, very active and with a very promising professional career as pathologic anatomy technician, now that he recently started a new postgraduate course in the area. Ralph acquired his physical disability through a leg amputation when he was ten years old. He did not talk much about the accident. However, during the interview he gave the idea that this event did not cause a major difference in his life. He was able to cope with his disability and accept the way he is. Ralph's sport career has not been going very long. He started playing basketball four years ago, and he is already an international player with several appearances in the national team. According to his coach, he is a player with a big future because he is young, very talented and with a huge margin for development, as he is already one of the most important players in his team that became Portuguese National Champion since his

arrival. He was used to training three times a week and playing on weekends but this season because of a lack of sport facilities he is just training once a week.

Jack is a 55 year-old mature male, married with two girls, very talkative and available to share his life experiences. Jack had an accident when he was five years old. He was run over by a bus and his legs suffered serious damage. Many years later, Jack had a limb amputation that caused him an acquired physical disability. Jack's experience with disability sport began eighteen years ago after his first amputation and since then he has been involved with different sports. Jack was Portuguese National Champion in javelin, discus and weight throw. He also experienced the wheelchair marathon, but he decided to focus his attention on the wheelchair basketball. His team has been Portuguese National Champion for the last three years and he feels very proud about it.

5.3.3.1. - Cross-narrative analysis and discussion for cluster 3:

The main ideas and feelings expressed by members of cluster 3 - wheelchair sport participants with high Physical Self-Worth and Global Self-Esteem profile – are presented to characterise the different dimensions of physical self.

Physical Self-Worth

Participants from cluster 3 in many respects report similar emphases on self-perceptions in lower order themes and use these to produce their overall feelings of physical self worth. The main ideas expressed show that these participants perceive their Physical Self-Worth through positive feelings and confidence about the body and about the benefits of doing sport as well as through a holistic view of their bodies. Other ideas such as the normality versus impairment comparison, the prejudice and stereotype attitudes towards disability and disabled people and their personal strength and will to overcome daily problems and barriers, are also important key aspects mentioned by participants from this cluster. Finally, the health issues and the pride about themselves and about their bodies also make an important contribution to the way they perceive their self-worth.

The majority of the participants in this cluster perceive their physical self through positive feelings about their bodies. A good example to support this idea was expressed by Charles. In spite of feeling *"heavier and a little bit rusty"*, he is very happy with his body and *"keeps the same confidence always had on it"*. Ralph also expressed *"positive feelings"* and *"pride"* about his physical self. He perceives these feelings in different competitive sport situations such as the national champion titles his team won since he joined them. He feels he has made an important contribution to the team achievements.

In spite of his limb amputation and the numerous scars caused by many surgeries Jack has very good feelings about the physical part of the body. He *"feels good about it"* and he has positive perceptions at different levels such as muscular, skeletal and physiological. He is *"100%"* sure about the level of satisfaction with his *"body"*, including his physical self.

The majority of the participants in cluster 3 perceive their Physical Self-Worth through feelings about the personal benefits of doing sport. Their general opinion is that through sport people with disability have a set of advantages that contribute to the development of more positive feelings about the physical part of their bodies as well as about individual's relations with their peers:

> *"All of this is due to sport ... it helps a lot to feel better, in mental aspects, it helps to face life in a completely different way...I feel better with others, with society, ... it is an open door for many situations that happen in daily life".*
>
> *(Mike: Interview 2)*

Taking part in sport also increases knowledge about their body limits and empowers people to overcome daily life obstacles and barriers without any external help, providing an important contribution for the development of higher feelings of autonomy. Sport is perceived as a vehicle providing opportunities for achievement and personal growth.

> **"To feel physically well is good for your health ... not only to your physical but also to your psychological health ...through sport we feel more confident, we understand better our body limits ... its easier to do things, to overcome obstacles and barriers, without anybodies help".**
>
> **(Charles: Interview 8)**

A holistic view of the body and the fact that some people with physical impairment perceive themselves through global feelings about the physical part of their body, giving less importance to the "parts", i.e., to the different dimensions of the physical self, is another important idea expressed by some of the members in this cluster. As an example, Ralph perceives his body as an all (holistic view) so from an analytical point of view he does not make any distinction between parts with and without impairment. Both are very important to him:

> *"Some parts of my body are inside the normality pattern and others are outside of the normality pattern, however I give the same importance to both. That's how I am! That's how I accept my body and live with it! I do not try to hide any part of it. That's the way my body is and I live that way".*
>
> *(Ralph: Interview 10)*

Health behaviours are also an important way through which some participants with physical impairment perceive their bodies. For Peter, the main elements through which he perceives his body are eating habits, stress, drinking habits and weight control.

> *"Now I am more careful with my eating habits, on the other hand I do more sport ...because I am self-employee now I have more stress, I am always busy, I am more concerned with my eating habits now. I don't drink alcohol, some years ago I did, I had a big stomach ... now I am more careful ... if I become heavier that would influence my walking because of the prosthesis ..."*
>
> *(Peter: Interview 9)*

On the other hand, Charles' body did not cope so well with the decrease in exercise due to the lack of free time after he got married. His family stability was more important than sport, and he feels frustrated for not training so often and he perceives it as a problem because that is an important threat to his healthy life style:

> *"Yes, frustration is the correct word, suddenly I stopped training so frequently and my body felt that ... I felt heavier, less agility, more limited in my actions ... and that made me realise the need for not stop training at all in order to avoid a more serious situation ...this shows the importance of doing sport to improve our health, it is fundamental ... if people feel physically well that is good for their health".*
>
> *(Charles: Interview 8)*

Finally, some members of cluster 3 perceive themselves in the physical domain through strong feeling of pride with themselves and with their body. As an example Charles perceives the physical part of his body through the positive feelings he has about his muscles. Others frequently admire his athletic body, and that is perceived as a personal motive of pride and pleasant feelings:

> *"Always had a body with many muscles ... feel proud of what it was and still is ...people admired me as an athlete and the physical aspect was very important ... when I was on the beach people looked at me because my body and my muscles attracted their sight, my upper body, my arms were very strong, not my legs because of the impairment ... always felt my body as object of curiosity and admiration, and that was very nice".*
>
> *(Charles: Interview 8)*

Charles´ feelings about his body are a good example showing that not all people with physical impairments have negative feelings about their bodies, such as feelings of shame and a strong desire to hide their bodies as well as low levels of satisfaction with them, as previously mentioned by some participants from cluster 1.

Physical Confidence (Sport Competence & Physical Condition)

Cluster 3 member's opinions about their Physical Confidence is characterised by similarity rather than diversity in the low order themes used to express their perceptions. The main content used is based on their sport experiences, on their sport performances as well as on their capacity to overcoming exertion and testing personal capacities.

All the participants from cluster 3 consider that lived sport experiences are very important to the way they understand and perceive their Physical Confidence. For this group sport is seen as a vehicle that contributes to the establishment of more rich and specific self-perceptions about Physical Condition and Sport Competence. As an example, Mike considers that the positive feelings about his Sport Competence are very much reinforced by the diversity of competitive experiences he lived over his sport career:

> *"I had one competition that was very important to me, the 20 kms of Almeirim. There was a guy ... he was the national champion for many consecutive years ... I was in the race and I had a small accident and fell. I jumped again to the wheelchair, ... I started pushing very hard ... and finally I met this guy in the first place. I was afraid because I was side by side to him and I didn't know what to do! Should I go on and he comes after me or should I wait till close to the end? Then I thought if it was quite easy for me to get to this point why shouldn't I go on? And I went! He came with me for one or two hundred meters and then stayed back ... and I won the race. At the end I realised that with a strong will and good Physical Condition we can achieve our targets".*
>
> *(Mike: Interview 2)*

Those experiences were very important to him because he realised that sometimes people *"are able to do much more then they think they can"* and that is very reinforcing for people with physical impairment. On the other hand, Charles compares himself with other players during many of the competitive

situations he has had during his life. These comparisons were established both in the physical as well as in the psychological domain:

> *"Once in Spain* [S. Sebastian] *there was a competition, most of it was in the mountains, very hilly, and it was raining. The others* [Spanish athletes] *had very modern equipment, I had an old chair, didn't even had gloves at the time. With the rain the hand slipped on the wheelchair's hand rims, they became black because of the aluminium, I had to put my hands on the tires if I wanted to push the wheelchair harder ... even though I was second, this was a big moment of pride for me".*
>
> *(Charles: Interview 8)*

Such feelings are very important to Charles and for the way he perceives himself as a person. As Mike says, all these *"moments of glory compensate other not so good moments we might face in daily life"*. These successful situations experienced through doing sport have a compensatory psychological effect in the daily lives of people with disability because:

> *"Many people with disabilities spend too much time alone and if we think in these successful moments we will feel good with ourselves. It happened with me, we all have difficult moments where we think about many things, but if we think that, after all I already did some good things ... some beautiful things, it's easy to cheer up and overcome those difficult moments ..."*
>
> *(Mike: Interview 2)*

Most members of cluster 3 also perceive their Physical Confidence based on feelings about their sport performance. For example, Ralph assesses his level of satisfaction with his performance comparing himself with others in different specific aspects of the game *"such as speed, ability, strength, mobility and shooting skills"*. This comparison is, in Ralph's opinion, *"a reference point,"* that allows him *"to self-evaluate his performance and establish some personal criticism"*. This idea is also shared by some of his cluster mates.

Other members of cluster 3 perceive their Sport Competence and Physical Condition through feelings of overcoming exertion and testing personal capacities. This is a very common idea among the majority of the members in this group. For example, the reasons that support Jack's idea of how good an

athlete he is are very much based on the type of attitude he has towards training, concentration and hard work and to the fact that his body *"is still giving a positive response to exertion"*:

> *"I have been playing basketball for eighteen years and I have missed a few training sessions ... I am available for training as many times as needed, usually three times a week, one and a half to two hours each training session, and the body always gave a positive response to exertion ... always gave my best in training ... we should always keep our concentration to use that during the games".*
>
> *(Jack: Interview 13)*

Mike also considers that his Physical Condition is *"quite OK"* and helps him *"to overcome physical exertion"*. On the other hand, Charles feels happy about his *"physical level"*. He believes it is very important for competition because it allows people to achieve higher levels of exertion and higher sport performances but on the other hand it is also very important for health purposes.

Most member of cluster three perceive that other's opinions about their Sport Competence and Physical Condition is not important to them. For example, Charles never bothered with other people's opinion about him; he says he did what he did for himself not for others:

> *"I am involved with disability sport because I like ... it makes me feel well with myself ... it's good for my health, I feel free when I do it ... never did it for others, I am selfish, I care about myself not about others. Never took into consideration other peoples opinion, and never did it to please anyone other than me".*
>
> *(Charles: Interview 8)*

Peter is not very much concerned about what others think of his Sport Competence either. Those who are really important to him already know him well and know that he is always available to give his best. However, they accept that sometimes he does not perform at his best level. He feels confident about what his team mates think about him because he knows that they do not see his behaviour as a physical or a psychological weakness, and that they still believe he is able to improve in the future:

> *"People* [team mates] *have known me for a long time, they know me ... we are like a family ... about my Sport Competence they know exactly how I am, sometimes I stop, they tell me that frequently for me to improve ... we have always to improve ... I am not an adolescent anymore but I am still young".*
>
> *(Peter: Interview 9)*

He suggests that other people's opinion about winning was initially very important to him because he was young. Now, after marriage it is not so important anymore because he feels happy and fulfilled and there is not much to prove anymore. Mike feels he has the power to decide what he should do or not about his life. He has a particular approach to life, he likes to have new experiences as well as to test his limits and other people's opinion about it is not relevant to him *"even when some people are critical about it"*

Most members in this cluster perceive their Sport Competence and Physical Condition comparing themselves with others, in particular wheelchair sport participants and other people without disability not involved in sport. The main elements that support Mike and Charlie's opinion about their Physical Confidence are based on the comparisons they establish with other people with disability doing sport:

> *"In the races I am the oldest guy competing and I am still on the first half of the board ... some guys I am competing with are old enough to be my sons however ... and most of them have a different lesion, my lesion is quite high however my performance is good. I feel very happy with it".*
>
> *(Mike: Interview 2)*

On the other hand, Ralph perceives his Sport Competence *"comparing him with other different elements of his basketball team"*. His level of satisfaction about his performance is assessed comparing himself with others in different specific aspects of the game *"such as speed, ability, strength, mobility and shooting skills"* and these elements are perceived as *"a result of the work done during training sessions"*. The comparison with others is, in Ralph's opinion, *"a reference point,"* that allows him *"to self-evaluate his performance and establish some personal criticism"*.

A different view about Sport Competence and Physical Condition is perceived by some elements of cluster 3 based on feelings related with health and well-being and achievement through sport and exercise. Jack perceives his Sport Competence through doing sport because he sees it *"as an escape to daily life problems"* and a useful help to overcome the problems he faced in his life:

> *"For example, I was seven years without working after my first amputation. I was the entire day at home, taking care of my kids and living with my wife in a daily basis, day and night. There was a shortage of money ... we had financial problems because I lost my job and was not able to find another one, so the training sessions and the games (competition) were a very important escape to me. It was a relief every two or three times a week I came for training because I was able to throw out everything I went through that day or during that week. It was a fundamental help in my life, it helped me to feel free from all the problems I had in my life ... I was able to release the stress I had and not to take it back home with me ... people at home, my wife, my kids were not responsible for the stress I felt however they were the source of that stress ".*
>
> *(Jack: Interview 13)*

His physical and psychological well-being achieved through sport has had an important impact on his life and has balanced the relationship he has had with his family during the difficult years where he faced financial problems and unemployment.

Body Attractiveness

Members of cluster 3 perceive their Body Attractiveness through general positive and pleasant feelings about their body. The sensuality of the body, the sexual attractiveness and their active and normal sexual life are examples of the key elements presented by cluster 3 members as relevant for the way they perceive their Body Attractiveness.

For example, Charles shows very deep feelings about his body, in particular about the perceived attractiveness of his physique and ability to maintain his Body Attractiveness. Since he started engaging in sport, his body has become very athletic and his muscles sculptured, particularly in the upper body, including trunk and arms. His body in general and his muscles in particular were frequently admired and often caused positive reactions among others,

especially among females. He suggests that these feelings associated to personal characteristics such as a strong will and a very high discipline during training contributed to a high self-esteem:

> *"After starting doing sport, my body developed more muscles, particularly in the arms. This is normal because of the sport (wheelchair basketball) where the arms and trunk are much more used then legs ... I was frequently recognised and admired, and that caused me a great positive emotion ... the ego and the self-esteem increased"*
>
> *(Charles: Interview 8)*

Ralph has provided an interesting way of expressing the feeling he has about his Body Attractiveness and about the confidence he has in his appearance:

> *"Each one sells what each one has to sell ... and what they are able to publicise! What I have is what I sell, however to feel my body attractive is not very important to me because I know exactly how I am and the fact that people accept me or not is not relevant to me ... I feel this way because the external appearance is not very important to me, however I would be missing the truth if I would say that it is not a bit important ... but inside that bit I consider myself attractive considering my impairment".*
>
> *(Ralph: Interview 10)*

Finally, Jack feels good about his Body Attractiveness. He jokes about it, about his age and how he feels a bit heavy but he gives a clear and meaningful examples of how it brings good feelings and how it affects his experiences with females:

> *"Nowadays I am 55 years old, I am an amputee and I am a bit fat but ten years ago ... I can tell you about a funny story that happened to me ... we were in Luxemburg ... in a campaign against architectural barriers with a groups of people from different countries Portuguese, German, Luxemburg and English ... there was a German lady that when I saw her arriving I said to my friend: That's the most beautiful girl of the party. A few days latter, during a banquet in Mondorf my friend says to me: Remember the lady you said it was the most beautiful of the party? She is there looking at you for a long time. I replied: Don't joke with me; there are so many young guys here, why would she look to a bald fat guy with a limp? But I started staring at her and it was really true. Since that moment we were there for twelve days and she was a fantastic date ... I was always lucky with females all my life".*
>
> *(Jack: Interview 13)*

Most members of cluster 3 perceive their Body Attractiveness through feelings about their active and normal sexual life. Mike is very critical of those who feel ashamed or who fear talking about sexual issues in people with disability because those issues are very important to paraplegics. In his opinion: *"there is no reason for us not to have a relationship with females, ... there is nothing against, as long as on the other side there is someone who understands us ... someone who accepts the difference"*. From his personal experience the major problem with most of the relationships he has had were caused by prejudice:

> *"It's an educational problem, their parents were not prepared to accept their daughters dating a disabled guy. That was a huge shock to them ... they try anything to split them apart ... it happened to me several times, with different girls"*.
>
> *(Mike: Interview 2)*

Despite legislation, prejudice and discrimination is something that is socially constructed (Oliver, 1996) and continues to negatively influence opportunities, lifestyles, and therefore the self-perceptions of people with disability (Sherrill, 1997). Sexuality is still a taboo issue among many people with disabilities. Not much information about this issue is provided to this particular group. On the other hand, not much information is either available to individuals without disability about the sexual behaviours and attitudes of people with disability so it is frequently seen that this ignorance feeds prejudice, discrimination and stigma. Mike's sexual life is now stable and that is very important to him because he feels secure: *"Nowadays I live with a lady for many years and that's fulfilling for us ... she sees me as a normal person considering my limitations, and that's very good to me"*.

Other members of this cluster feel no difference in their sexual lives. In Peter's opinion *"there is not much difference because the impairment is not very limiting"*. His sexual life is perceived as being *"very active"* and *"completely normal"* with prosthesis or without prosthesis, because with the prosthesis Peter considers himself a completely normal person, *"even able to run"*. Jack has always had a special touch with females, *"never felt any problem"*, he considers himself as *"a completely normal person, without any physical, sexual or relational problems"*. He feels a happy man *"with a common family life, ...*

with a wife, daughters and granddaughters" and his sexuality was never a problem to him.

Mike feels unhappy and critical about the way disability and sexual issues are discussed. He feels that there is a general lack of information about this topic among people with and without disability. People with disability feel a lack of information about their sexual lives, about their sexual needs and behaviours, and often feel guilty for their feelings about it. Frequently people with disability are not able to get the information they need from health professionals because they simply avoid talking about these issues. Additionally, many people without disability have little idea about the sexual life of people with disability and frequently speculate about it, creating more taboos and increasing social pressure over them:

> *"People make a big fuss of it, even doctors ... in Alcoitão (rehabilitation centre) when we talked about it, they ignored and changed the subject ... it is an issue where people don't feel comfortable to talk about ... people feel ashamed, but it is very important for us".*
>
> *(Mike: Interview 2)*

Some participants from cluster 3 perceive their Body Attractiveness through pleasant feelings about their body. According to Mike the main elements felt as important to perceive his Body Attractiveness are related with feelings *"of confidence about the appearance of the body"*, however he recognises that these feelings are contradictory because other people might feel embarrassed and ashamed of their bodies:

> *"I feel totally OK with it ... however others might feel a complex, people with serious impairments might feel some reluctance, might not feel comfortable with it".*
>
> *(Mike: Interview 2)*

Finally some other members of cluster 3 perceive their Body Attractiveness through the affective expression of others. For example, Charles thinks that his body appearance has had an important positive influence on the relationships he established with other people, in particular with females. In spite of considering that physical appearance is not the most important aspect in a

relationship, he remembers, *"there were different glances, different approaches that made people talk more ..."*. The cultural aspects and the way people are able to talk and express themselves are as much or probably more important than physical appearance. Due to his introverted behaviour Charles feels that he *"communicates through the physique ... through my physique I tell many things to people"* so his body language has an important role in the relationship he establishes with others.

Physical Strength

Cluster 3 members perceive their Physical Strength through feelings about improving personal game performance. Jack expressed positive feelings about his Physical Strength, however he would not mind starting *"a programme in the gym to improve Physical Strength a bit more"*. In his opinion to improve the Physical Strength *"would also have positive effects over performance in the game"*. Peter also considers that some aspects of his Physical Strength *"could have been improved using special weight training sessions in the gym"*. He gives the example *"of many professional wheelchair basketball teams"* he played against that *"have regular gym training sessions as a complement to the wheelchair basketball skills training"*. These training programmes aim *"to increase muscle mass and strength in order to improve game performance"*. Strength is therefore considered as important for sport performance and participants perceive themselves as having inadequate strength or that it needs to be as good as it can be for sport.

Finally, some of the members from cluster 3 perceive their Physical Strength through the autonomy they gain to overcome daily life barriers. For example Mike perceives his Physical Strength by comparing himself and the things he is able to do with other paraplegics. He feels very happy with it because he feels autonomous and able to face unexpected difficulties, physical or architectonic, in his daily life:

> *"Most of the guys I know are not able to do what I do ... I am able to get the wheelchair out of the car, put it back in the car without any help ... I am able to climb slopes, to climb up and down the sidewalk, to do many other things that most of the guys are not able too ... what makes me say that I am happy with it is the way I compare myself*

with other people and to be able to do a group of tasks others are not able to do ... that gives me total autonomy".

(Mike: Interview 2)

Mike provides many examples of daily, unexpected situations where his Physical Strength has been very important and has allowed him to overcome difficulties. These situations make him feel confident about his abilities as well as ready for new challenges:

"Another big victory happened with my three wheels motorbike ... one day I was arriving home and the gate to my garage is usually opened so I just push it with my front wheel and get in, however, that day it was closed. What do I do? I tried to use the back rear but the slope that gives access to my garage is too hilly and there is no space to turn the motorbike. With the bike on that position it was impossible to get in. So I decided to take the wheelchair out and try to climb the slope and get in by the front door but the slope had sand on it and the wheelchair was sliding. I had to throw the wheelchair up the hill and crawl up the hill till I got to the main road and then jump on the wheelchair and get in through the front door and open the gate. These are the type of things that happen to me and that I have been able to overcome without any help, I just solve them ... in the future, I don't know!"

(Mike: Interview 2)

Global Self-Esteem

Participants from cluster 3 expressed their personal feelings about their Global Self-Esteem and sometimes referred to different situations in the context of the physical self. As an example, Ralph mentioned, *"people are a result of the experiences they have through their lives"* and that's *"very important to build our own personality"* so his high self-esteem was built based on the experiences he lived and competing in sport had an important role in this:

"Doing sport put people on challenge ... makes them overcome barriers to achieve their aims and that is very important to reinforce our ego and to empower our self-esteem".

(Ralph: Interview 13)

He also assumed changes in his self-esteem before and after the accident. In spite of being very young *"the accident was a turning point"* in his life, from that moment on he learned to give more importance to the things that surrounded him. His self-esteem was also built on different aspects such as the

value of life itself, his family, his body and he built a stronger and more solid image of himself when compared with any other kids of his age:

> *"I think it changed* [self-esteem], *it changed after the accident ... I was 10-11 years old and in terms of development we learn things in a different way. That was a turning point in terms of normal evolution ... the fact that it happened at that particular time made it a marking turning point ... the self-esteem I built based on the things that surrounded me made me value other aspects such as my own life and my body ... everything related with my life, my family my body and that made me built a much stronger image of myself than it was expected".*
>
> *(Ralph: Interview 13)*

A good example of how self-esteem may be affected by life experiences is the episode Ralph lived of a relationship that finished that he attributes was due to prejudice and lack of information about disability. However, that experience didn't affect his self-esteem, actually it increased as he realised that if people give much attention to external appearance (physical appearance), they are wrong because there are other aspects at least as important as that in a relationship. However, they are free to live with the prejudice if they do not want to be informed or change their ideas:

> *"I usually leave people with their own prejudice, specially when they don't want to change ... each one is free to leave with their own prejudice if they want too ... this was a personal aspect of my life ... now that I overcame the situation, I thought that it might affected my self-esteem but that didn't happen ... it had the opposite effect, it turned me into a stronger person".*
>
> *(Ralph: Interview 13)*

These are the types of situations that makes Ralph understand who he really is and that transform him into a stronger person.

Other themes

This dimension is characterised by diversity rather than similarity of ideas, with issues such as sexuality, social attitude towards disability, overcoming internal barriers about disability and health problems being among the most important concerns of cluster 3 participants. Some of these issues influence physical self-perceptions, their Physical Self-Worth, and potentially their self-esteem.

Social attitude towards disability

Peter is very critical about the Portuguese social attitude towards disability and the idea that common people have about other people with impairment. The most common feeling is still the feeling of the *"poor guys"*, *"those who got some kind of impairment and are no longer able to do much"*. This approach is a heavy *stigma* for people with disabilities and the most unusual is that this kind of *stigma* is still perpetuating from generation to generation. In Peter's opinion that's *"an educational problem"* that will only be solved *"when people understand that they are all the same"*:

> *"There are impaired people but they are similar to other people, they have the same capacities or sometimes greater capacities then those frequently called as normal."*
>
> *(Peter: Interview 9)*

Overcoming the internal barrier of disability

Ralph also talked about those people who are able to overcome the *"internal barrier of disability"*. He suggested that in spite of all the physical limitations they have are able to cope with it go on with their lives and keep struggling for their aims. Ralph thinks that *"common people have a lot to learn from these people ... because society in general has got the stereotyped idea of looking at them like they were poor persons"*, with feeling of compassion, mercy and segregation. However, *"these people are able to overcome that stigma and ... everyone should be able to see the things they are able to do"*. This is a good example of what in the literature was mentioned as growth through adversity.

Table 5.5 presents a summary of the main ideas and feelings reported by the members of cluster 3 to express their personal opinion about the kind of content they use to formulate their Physical Self-Worth. In general, participants from cluster three discuss positive feelings, confidence and pride about their bodies. Most participants mentioned a clear association between sport and exercise participation and positive feelings of Physical Self-Worth, self-confidence and motivation to participate in life situations as well as overcoming daily life problems and barriers. Most participants also reported that their participation in competitive sport events makes them feel better prepared to face life, to

become more competitive and autonomous to achieve their personal targets (achievement through exercise and sport). Finally, members of this cluster perceive their Physical Self-Worth as contributing to their health as these feelings are perceived as important benefits of exercise and sport participation.

Cluster 3 members feel very proud about their Physical Confidence, i.e., about their Sport Competence and Physical Condition. Most feelings about Physical Confidence are perceived through participants lived sport experiences, particularly those that have taken place in international competitive sport settings, involving high levels of sport performance. In these events cluster 3 participants perceive that they have found the right environment to overcome exertion and test their own capacities as well as to compare themselves with other competitors with physical disability playing the same sport. These comparisons include technical and tactical skills as well as more specific aspects of Physical Condition such as speed, strength, endurance and coordination. Athletes from this cluster perceive very high levels of Sport Competence and confidence in their capacities as other's opinion about them and about their performances is not perceived as important to them. However, self-assessment and self-criticism is an important strategy to improve performance. Not many differences were found between cluster 2 and cluster 3 participants concerning Physical Confidence. The key elements for this dimension are very similar in both clusters, and considerably different from cluster 1 participants.

Participants with high Physical Self-Worth and high self-esteem profile perceived their Body Attractiveness in different way when compared with participants from other clusters. Body Attractiveness is key issue among participants in study three. Low Physical Self-Worth and low self-esteem profiles presented a poor opinion about their Body Attractiveness, expressing feelings of dissatisfaction with the body as well as shame and denial towards their bodies. On the other hand, participants with a medium Physical Self-Worth and medium self-esteem profile do not express dissatisfaction towards their bodies but perceive them as not attractive to others. Finally, members from cluster 3 (high Physical Self-Worth and high Global Self-Esteem) showed a different approach to their bodies as they reported to have very pleasant and positive feelings about their bodies based on an active and normal sexual lives.

Some individuals in this cluster also mentioned feeling the sensuality of their bodies and having experienced positive affective expressions from others.

Positive feelings about Physical Strength associated with a strong desire to improve it in order to improve game performance are among the most important feelings expressed by cluster 3 members about Physical Condition. This sub-domain is also perceived as very important for people with physical disability in terms of autonomy as well as to it's global contribute to overcoming daily life barriers.

Participants from cluster 3 perceive their Global Self-Esteem through feelings perceived in different lived sport experiences. They also perceive their Global Self-Esteem through the global changes occurred in their body and in their lives before and after the accident. These changes are usually perceived in a very positive way as individuals from this cluster present a positive attitude towards their disability. Comparing these players with cluster 1 participants, they accept their disability as a common situation in life, with no feelings of revolt, lack of acceptance or denial, as they try to take the best out of their bodies (with impairment) to live a "normal and common life". Members from this cluster perceive themselves as common people, with a family, with a job, with responsibilities and tasks to achieve in life. Frequently they face stigma and prejudice from their interactions, and they have to overcome internal fears and barriers to show others that they are as useful and productive as able-bodied individuals.

Finally, the acceptance of disability seems to be the key issue for participants in this study and to how they view their physical selves and self-esteem. It seems that their sport success has played a part in finding that acceptance and so it has grown side by side both in cluster 2 and 3 participants. However, it is not apparent in cluster 1 members.

Table 5.5 – Main lower order themes expressed by members of cluster 3

Lower order themes	Higher order themes	General dimensions
Focus on: • Benefits of doing sport • Positive feelings and confidence about the body • Holistic view of their body • Normality versus impairment comparison • Prejudice and stereotype attitudes towards disability • Overcome daily problems and barriers • Health issues • Pride with themselves and with their body	Physical Self-Worth	All three groups (N=14) Cluster three: Participants with high Physical Self-Worth and Global Self-Esteem profile (n=5)
Focus on: • Lived sport experiences • Sport performance • Overcome exertion and test capacities • Other's opinion not important • Comparison with others • Health and well-being • Pride • Positive feelings about Sport Competence and Physical Condition • Self-assessment and Self-criticism • Achievement through sport and exercise	Physical Confidence (Sport Competence & Physical Condition)	
Focus on: • Active and normal sexual life • Sensuality of the body	Body Attractiveness	

(Continue)

• Pleasant and positive feelings about the body • Affective expression of others		All three groups (N=14)
Focus on: • Positive feelings about Physical Strength • Improve game performance • Desire to improve Physical Strength • Autonomy to overcome daily life barriers	Physical Strength	Cluster three: Participants with high Physical Self-Worth and Global Self-Esteem profile (n=5)
Focus on: • Built based on lived sport experiences • Changes before & after the accident	Global Self-Esteem	
Focus on: • Sensuality of the body with disability • Critical about way disability and sexual issues are discussed • Lack of information (individual & professional) • Speculation & taboo • Critical about social attitude towards disability • Stigma • Educational problem • Overcoming the internal barrier of disability	Other dimensions (Sexuality) (Social attitudes towards disability) (Disability internal barriers)	

5.4. - DISCUSSION

Table 5.6 presents a summary of the major low order themes presented for each clusters analysed in study three. As might be expected when asked to describe general experiences study three is characterised by both similarity and diversity of issues, feelings and opinions over the different sub-dimensions of the physical self. Diversity was found for the lower order theme used by participants to express their personal feelings and ideas about their Physical Self-Worth. Non-directive probes were used for clarification and elaboration of the questions while paying attention not to influence the content of answers.

Cluster 1 participants are critical about their physical bodies, in most cases are not happy with them and consider the physical self as something not important to their lives. The majority did not identify the main elements of the physical self and some consider it as meaningless. It is difficult to identify what exactly contributes to Physical Self-Worth in this group due to the diversity of the ideas expressed by the different participants. However, Physical Self-Worth is self-referenced based on personal insights and feelings not involving any comparison with others with or without disability.

Unusually within the clusters, cluster 3 participants presented uniform feelings and ideas about their Physical Self-Worth based on positive feelings about their bodies including specific feelings of pride, confidence in overcoming daily life problems and barriers, benefits of doing sport and other health issues. For most participants specific perceptions about their Physical Self-Worth are developed using able-bodied sedentary people as a reference and involving comparisons between people with and without disability (normality versus impairment approach). The positive feelings about the body or general benefits for participating in sport were shared with participants from clusters 2 and 3. However, individuals in cluster 2 used lower intensity and fewer arguments to justify them.

The holistic view of the body was found in all clusters. Ideas and feelings expressing the indivisibility of the body from its specific parts is generalised among these Portuguese wheelchair sport participants. This particular view

about the body is a popular approach in the rehabilitation arena, very much associated with the normalization concept (Auxter, Pyfer & Huettig, 1993; Sherrill, 1998). Normalization "means making available to the *handicapped* patterns and conditions of everyday life which are as close as possible to the norms and patterns of the mainstream of society" (Auxter, Pyfer & Huettig, 1993, p.20), and these patterns and conditions preclude a global development of the individual in the educational, functional, psychological, emotional and social areas. This idea may be useful for further understanding and support of the results previously found in study two where a big amount of cross-loadings between the PSPPp factors were found in wheelchair basketball players, suggesting that most individuals with physical impairment may perceive their bodies physically in a different way.

Physical Confidence sub-domain showed a broader set of similarities among participants from all the clusters demonstrating that repeatability exists both in feelings and ideas used to express Physical Condition and Sport Competence wheelchairs sport participant's self-perceptions. Qualitative research interview data from wheelchair basketball participants provided support for the suggested conceptual confusion between Sport Competence and Physical Condition sub-domains, for the Portuguese population.

For all clusters in this study, wheelchair sport participants expressed their feelings and ideas about their Physical Condition using examples from disability sport situations and environments. In some cases participants mentioned the importance of being involved in competitive sport situations and environments associating them with health benefits for people with disability, giving further support to the tenet that most Portuguese young adults can only perceive high levels of Physical Condition and fitness when related to Sport Competence and participation in competitive sport. For many people in Portugal the level of Physical Condition is viewed as related to people's involvement in a competitive sport situation even if this situation happens in a low competitive level. Similar perceptions were found in the present study with wheelchair sport participants.

Participants from clusters 2 and 3 expressed positive feelings about their Physical Confidence while participants from cluster 1 expressed themselves in a

different way through variable feelings (negative and positive) about their Physical Confidence. Most of these feelings are based on lived sport experiences, i.e., competitive sport situations and environments experienced by these players and perceived as very important to support their personal opinions about their Physical Confidence. However, these feelings are referenced in a different ways. Participants with a low level of Physical Self-Worth and Global Self-Esteem profile perceive their feelings about their physical self as self-referenced. Participants with a medium level of Physical Self-Worth and Global Self-Esteem profile perceive their feelings using other people with physical disability as a reference and participants with a high level of Physical Self-Worth and Global Self-Esteem profile also perceive their feelings using active individuals with disability as well as sedentary able-bodied individuals as a reference.

The majority of participants perceive significant other's opinion about their Sport Competence and Physical Condition as very important. Cluster 1 and cluster 2 members perceive significant others (parents and closer friends) opinion and feedbacks about their Physical Confidence as something very important and motivating for the way perceive themselves as persons while cluster 3 members consider that significant other's opinion is not important for the way they perceive themselves as persons. Cluster 3 elements are more confident about themselves and about their Physical Confidence expressing higher levels of autonomy and availability to overcoming exertion and test their individual capacities. On the other hand, cluster 2 members also express their happiness with their Physical Confidence, although exhibit a strong desire to improve their Physical Confidence and sport performance, showing lower levels of confidence when compared with their companions from cluster 3. Finally, cluster 1 members are the less confident. Some of these participants express feelings of fear and lack of confidence about their Sport Competence and Physical Condition.

Considerable differences were found between cluster 1 and cluster 3 members perceived feelings and opinions about their Body Attractiveness providing further evidence for the idea of different physical self profiles for individuals with high and low level of Physical Self-Worth and Global Self-Esteem. Cluster 1 members perceive themselves through negative feelings about their bodies,

particularly lack of confidence with the body, overweight and general feeling of unattractiveness about the body, considering it as not sexy. Cluster 1 members are also sensitive to a perceived considerable difference in body appearance before and after the accident. These members also feel the need to accept a new reality, their "new body" with disability and probably develop defensive mechanisms to overcome that situation sustaining the idea that physical appearance and the physical self is not important to them. On the other hand, participants from cluster 3 perceive their Body Attractiveness in a completely different way. They have pleasant and positive feelings about their bodies, give a lot of importance to their bodies sensuality, with a major emphasis on the fact that they have attractive athletic bodies, which are frequently flattered and admired and also talk about their active and normal sexual lives and about affective expressions from other's with and without disability.

Not much difference was found in the lower order themes used to express feelings and ideas of wheelchair sport participants about their Physical Strength. The majority of participants in the study showed positive feelings about their Physical Strength. In clusters 2 and 3 participants expressed a strong feelings of desire to improve Physical Strength due to it's importance both in sport and daily life situations, and to improve game performance as well as to provide higher levels of autonomy and overcome daily life barriers.

Participants in this study did not provide much in-depth information about the relationships between the different sub-domains of the physical self and Physical Self-Worth as a mediating variable between those constructs and Global Self-Esteem. Most of the information provided is vague and superficial with poor argument and justification for a deeper understanding of the phenomena. These relationships are, in most cases, circumstantial and enable a clear idea about the contribution of more specific construct of the physical self in the development of Global Self-Esteem.

In spite of wheelchair's basketball players opinion about physical self as something relevant and important for their daily lives, the lack of more clear relationships between these constructs and Global Self-Esteem may also be understood as a recognition that physical self may not play such a determinant

role on influencing approval or disapproval attitudes towards participants believes about their own competence, significance or respectability. In other words these self-perceptions in the physical domains appear not to be seen as having an important influence over their individual degree of favourable perceptions of their own self.

In spite of the diversity of feelings about aspects of the physical self found among participants in this study, each cluster presents considerable differences enough to justify its existence as a cluster, when compared with members from other clusters. This confirms the hypothesis that at PSW and GSE level, PSPPp is functioning well and showing to be discriminative among participants. No real evidence was found here to confirm a hypothetical possibility that the instrument has wrongly classified this group. Major differences are found on the way participants from different clusters express their confidence about their bodies, about the way they perceive their capacities, the confidence they express on the way they perform tasks involving their bodies and about their less positive feelings about their body appearance. These perceived feelings have a clear influence on the way participants perceive their Physical Self-Worth as well as on their general feelings of happiness about themselves.

Table 5.6 - Summary of the cross-cluster analyses

High order themes	Cluster 1 Low order themes	Cluster 2 Low order themes	Cluster 3 Low order themes
Physical Self-Worth	Focus on: • Criticism over the physical part of the body • Disagreement about the main elements of physical self • Holistic view of their body	Focus on: • Positive feelings about the physical part of the body • Holistic view of their body • No feelings of inferiority or shame • Benefits of doing sport • Difference in physical appearance – shape and size	Focus on: • Benefits of doing sport • Positive feelings and confidence about the physical part of the body • Holistic view of their body • Normality versus impairment comparison • Prejudice and stereotype attitudes towards disability • Overcome daily problems and barriers • Health issues • Pride with themselves and with their body
Physical Confidence (Sport Competence & Physical Condition)	Focus on: • Lived sport experiences • Variable feelings about Sport Competence and Physical Condition • Pride of their Physical Confidence Important for the way they perceive themselves • Important for the way significant other's see them • Health benefits of doing sport • Acquiring new sport skills (technical and tactical)	Focus on: • Training conditions and time spent in training • Positive feelings about Sport Competence and Physical Condition • Desire to improve Physical Conditions and performance • Lived sport experiences • Pride of their Physical Confidence • Attitude in the game • Acquiring new skills (technical and tactical) • Benefits of doing sport	Focus on: • Lived sport experiences • Sport performance • Overcome exertion and test capacities • Other's opinion not important • Comparison with others • Health and well-being • Pride of their Physical Confidence • Positive feelings about Sport Competence and Physical Condition • Self-assessment and self-criticism

(Continue)

		• Significant other's opinion important and motivating • Similar feelings about Physical Condition before & after the accident • Physical Confidence not important to other's • Achievement through sport and exercise	• Achievement through sport and exercise
Body Attractiveness	Focus on: • Negative feelings about their body (lack of confidence, overweight, not sexy) • Difference in body appearance before & after the accident • Physical appearance not important • Accept the new reality (body with disability)	Focus on: • Positive feelings about Body Attractiveness • Peoples core is much more important than Body Attractiveness • Body not attractive to other's • No comparison with bodies from magazine and TV	Focus on: • Active and normal sexual life • Sensuality of the body • Pleasant and positive feelings about the body • Affective expression of others
Physical Strength	Focus on: • Positive feelings about their Physical Strength • Pride • Important for the way they perceive themselves • Important for daily life situations	Focus on: • Positive feelings about Physical Strength • Desire to improve Physical Strength • Important to daily life situations	Focus on: • Positive feelings about the Physical Strength • Improving game performance • Desire to improve Physical Strength • Autonomy to overcome daily life barriers

(Continue)

Global Self-Esteem	Focus on: • Physical Confidence influence • Physical self influence	Focus on: • Physical Self-Worth • Sport Competence • Physical Strength	Focus on: • Built based on lived sport experiences • Changes before & after the accident
Other themes	Focus on: • Personal attitudes of acceptance and denial towards disability • Further support for disability sport	Focus on: • Social negative attitudes towards disability • Attitudes towards society • Physical and psychological empowerment • Segregation • Prejudice • Lack of information and knowledge about disability • Disabled people attitudes towards disability	Focus on: • Sensuality of the body with disability • Critical about way disability and sexual issues are discussed • Lack of information (individual & professional) • Speculation & taboo • Critical about social attitude towards disability • Stigma • Educational problem • Overcoming the internal barrier of disability

CHAPTER VI

FINAL DISCUSSION AND IMPLICATIONS

6.1. - DISCUSSION

There are at least two possible approaches to explaining the development of physical self-perceptions in people with physical disability. Both are based on distinct bodies of literature about the self. First, a psychological approach founded on the elements and mechanisms through which the self develops in the physical domain emerged in the 1980s. Second, a sociological approach that perceives the body as a socially and culturally constructed phenomenon that is experienced at the individual level through social and cultural interaction. The two approaches are rarely combined as they have their own bodies of literature, academic icons and paradigms of research and writing.

This dissertation features elements of research that fit comfortably in one or the other of these traditions. It works from the assumption that the body provides the major link between disability and self-identity and was designed using a sequence of three studies, two quantitative (QUAN) and one qualitative (Qual), which provided different insight into the development of self-perceptions of the physical self in groups with physical disability.

Findings will be discussed around a conceptual, a theoretical and a practical organization of the issues highlighted in the review of literature, looking for an in-depth discussion of the of the major key issues.

6.1.1. CONCEPTUAL ISSUES

Structural equation modelling used in study one revealed a poor goodness of fit to the hierarchical model of self-esteem for the physical domain suggested by Fox and Corbin (1989) both in female and male samples. The source of major discrepancy was the significant number of cross loadings occurring between Physical Condition and Sport Competence items. Similar evidence of the cross loading between Condition and Sport items has previously been reported for

other European countries, in non-English spoken settings, such as Spanish (Atienza, Balaguer & Moreno, 1997) and the Flemish Belgian population (Van de Vliet et al., 2002a), and were confirmed for the Portuguese youth population suggesting the existence of conceptual differences between these two constructs.

Sport Competence and Physical Condition both acquire a different meaning in some European cultures. The term sport is, in many European languages, influenced by the German concept of *Sportwissenschaft*, embracing a wider range of physical activities, both formal and informal (Zakrajek, 1991). These activities are much related to different competitive sports, but also associated with other forms of physical activity such as recreational pursuits and exercise (Haag,1986). On the other hand, in English speaking countries the emphasis tends to be on competitive team games.

In the particular case of Portuguese young adults, self-perceptions in Sport seem to elicit similar responses to exercise, endurance and stamina. Perceived competence in exercise settings emerges as the same as perceived ability in Sport. There is no differentiation between the two constructs and this suggests that a performance or functional rather than a health related view is used when formulating self-perceptions in these aspects of the physical self. Based on this evidence and the strength of items referring to confidence in the modelling, the term Physical Confidence has been applied to the proposed new sub-scale resulting from the combination of Sport Competence and Physical Condition items.

This conceptual confusion between Sport Competence and Physical Condition was also supported by the findings from the qualitative study (study three). This study provided further justification for the creation of a combined scale of tapping Physical Confidence. During the research, interviewees frequently used both concepts interchangeably and gave many examples where they stated that they perceived their Sport Competence through their level of Physical Condition and perceived Physical Condition as crucial to their level of competitive performance. Other athletes reported perceiving their Sport Competence through feelings about their Physical Condition, in particular feelings of stamina and fitness mixed up with feelings of confidence to perform well in sport environments.

6.1.2. THEORETICAL ISSUES

It was seen as necessary to undertake some preliminary work to investigate the potential of existing instruments to assess the physical self to improve our understanding of the way the body is perceived by those with disability. However, the Portuguese translation of the PSPP – the PSPPp - had only been subjected to preliminary validation with the Portuguese population and further examination was needed before it could be used with a disabled population. It did not seem a logical approach to use PSPP in Portuguese groups with physical disability while its validation has not been achieved yet for the Portuguese population without disability. Further support for this tenet was found on Fox's (1990) suggestion that PSPP should be accompanied by a rigorous psychometric application in order to establish its validity and reliability when used with other populations (with and without disability).

Study one confirmed validity and reliability of the Portuguese version of the Physical Self-Perception Profile and revealed that the instrument presented similar patterns both within and among constructs to the original study (Fox & Corbin, 1989), including gender differences of mean score values and standard deviations as previously found in other validation studies in non-English spoken countries (Atienza, Balaguer & Moreno, 1997; Van de Vliet et al., 2001).

Support was also provided for the hierarchical organization of self-perceptions in the physical domain with the Portuguese youth samples. A good degree of support was found for the basic factor structure as well as the existence of PSW as a mediator between the different sub-domain scales and Global Self-Esteem. Additionally, in the Portuguese version the level of variance found for PSW explained by the sub-domain scales suggested that the major portion of content used to express general feelings of Physical Self-Worth arise from the four sub-domains scales - Sport, Condition, Body and Strength.

Evidence was also found to support a new three-factor four items per sub-scale model for the Portuguese youth population. This model was re-tested using a sample of youth Portuguese secondary school students and the results were similar to the ones obtained for study one. Results confirmed that the goodness of fit for the three factors model was better in female than in male sub-samples,

with goodness of fit indexes reaching the traditional conventional value of 0.90 and in some cases the new proposed value of 0.95 for CFA indices (Hu & Bentler 1999). Once again, relationships found support for PSW as a generalised outcome of perceptions in the physical domain and as a mediator between the sub-domains and Global Self-Esteem.

Multi-group analysis revealed a good equality of factor structures for the PSPPp sub-domains over the four analysed samples using the new three factors model, as well as over male and female sub-groups suggesting that participants present a similar pattern of responses for the different PSPPp items over samples.

Although the Portuguese version of the Physical Self-Perception Profile appears to produce similar relationships as the original version, the factorial validity of the instrument is not yet fully established with Portuguese adolescents and adults, specially in male sub-groups. The PSPPp presents a more stable factorial structure in female than in male groups, however, further research is necessary using other samples as well as its administration to other age groups to achieve a broader validation of the instrument.

Study one also provided strong support for the idea that people involved in exercise and sport activities value their physical self and their body in a different way to those who do not. Study one findings confirmed the idea that individuals participating in exercise and sport activities presented a higher level of attention to their physical self and higher levels of satisfaction towards their body than other sedentary groups where it is more likely to feature less prominently. These findings support the idea that taking part in regular sport or exercise is moderately associated with more positive physical self-perceptions (Fox, 2000), particularly from late adolescents onwards (Fox & Corbin, 1989; Sonstroem, Speliotis & Fava, 1992).

The use of PSPPp with wheelchair sport participants revealed that the pattern of mean score values for all PSPPp sub-domains is similar to the one previously found for active individuals without disability. Wheelchair basketball participants presented higher mean score values than other sedentary groups without disability, however these mean score values were lower than those

presented by basketball participants without disability. These results provide further evidence to the idea previously found in samples without disability suggesting that participants involved in exercise and sport activities present higher levels of physical self-perceptions. This is of particular importance both in groups with and without disability as higher levels of self-perceptions associated with sport and exercise participation may have an important contribution to mental health and well-being. They may also help individuals avoid physical inactivity effects on social well-being such as breakdown of community and reduced social interaction (Fox, 2004). However, these results have to be treated with caution. The instrument factor structure was not as consolidated as the one found in populations without disability. There were several more cross-loadings of items on non-intended factors.

There were also differences in the hierarchical structure among PSPPp sub-scales. Expected relationships existed but were weaker and the three sub-domains explained a much smaller percentage of Physical Self-Worth when compared with values found for the Portuguese Youth population without disability. Furthermore, the links with Global Self-Esteem were different. Portuguese wheelchair sport athletes presented lower mean score values for self-esteem when compared with their basketball colleagues without disability as well as with other sedentary groups without disability. Although, these disabled athletes scored high in Sport, Condition, Body and Strength, this contributed less than might be expected to Physical Self-Worth. The expected link between Physical Self-Worth and Global Self-Esteem was not found. These results are in contrary to almost all other samples in the literature that have tested the hierarchical structure of the PSPP and its relationship with self-esteem.

Study two therefore revealed a major key point in the present research, the lack of relationship between the Physical Self-Worth and Global Self-Esteem in athletes with physical disability and also the weaker links between the sub-domains of the physical self and Physical Self-Worth. This unusual finding suggests that either the instrument is not working properly or the physical self as measured here in this particular group has different characteristics to the

general population. Either physical self-perception content is different or is utilised differently when formulating self-identity and determining self-esteem.

No reason is apparent from the instrumentation to justify the first tenet as the two factors (Physical Confidence and Body) identified by PSPPp in study two were also latter highlighted in the qualitative study (study three) as the major sources of information used to express interviewees opinions about their physical self. The different pattern presented for physical self-perceptions and for Global Self-Esteem in this group might be understood as a particular characteristic of wheelchair sport participants or it may be determined by the difference provided by dealing with physical disability. At this point, the approach using an existing quantitative instrument did not have the capacity to provide further insight in the key questions that arose.

Study three was designed to enable a greater depth of individual response. A change of approach was necessary and qualitative techniques of data collection and analysis were chosen. It was hoped that this would provide more detail on the nature of different elements of physical self-perception salient to this population and perhaps reveal insight into mechanisms that influence Physical Self-Worth and Global Self-Esteem.

Several key elements were identified as making an important contribution. The level of disability acceptance, individual feelings about the body, satisfaction with body appearance and capacity to keep the body attractive (sense of control over the body) as well as the influence of different psychosocial mechanisms such as significant others opinion about one selves, positive lived sport experiences, achievement through sport and exercise, growth through adversity, defensiveness and denial, are just some examples of mechanisms that may have important effects on the development of self-perceptions in the physical domain, in Portuguese wheelchair sport participants.

These findings are in accordance with some of the mechanisms outlined by Fox (2000) underpinning changes on the physical self as well as on Global Self-Esteem. The major variance found among studies looking for a relationship between Global Self-Esteem and exercise participation suggest that the

mechanisms are more likely to be of psychosocial origin. On the other hand, there is no evidence to establish sense of control over the body, its appearance and functioning as the main route to self-esteem change. The majority of individuals involved in study three (clusters 2 and 3) expressed moderate to high levels of satisfaction and control over their bodies, particularly in body appearance and capacity to keep the appearance of the body. However, they presented lower levels of self-esteem when compared with their colleges without disability involved in exercise and sport as well as with other sedentary groups without disability.

The qualitative research study also provided evidence to support the salience of other perceptual content included in the PSPPp. Personal feelings and ideas associated with Physical Confidence and Body Attractiveness sub-dimensions were clearly the most commonly used to explain positive feelings of Physical Self-Worth in this population. The number of lower order themes presented for Physical Confidence and Body Attractiveness indicated distinctions between members of different self-perceptions clusters. This suggests that these constructs have discriminatory power, providing further support for the results found in study two using the PSPPp.

Evidence was also found for the absence of a PSW-Global Self-Esteem link in this particular group. Wheelchair sport athletes revealed a lack of in-depth information about the relationship between Physical Self-Worth and Global Self-Esteem. Direct references to this relationship were not very common during the interviews. Most of the interviewees preferred to express their relationship with self-esteem based on perceptions experienced through lived sport and daily life situations where the different sub-dimensions of the physical self played a much import part than Physical Self-Worth. However, this might be expected as PSW is an abstraction of the sub-domain content and may not be accessible to consciousness in the minds of these athletes.

Prominently featured was the individual level of acceptance of disability and how coping with disability influences self-perceptions at several levels of specificity throughout the self complex. Individual attitudes towards the body, involving positive feelings about it and confidence to keep it attractive versus

unpleasant attitudes towards the body including defensiveness and denial mechanisms make some of the difference. With the exception of cluster 1 members, most of these participants have already overcome the internal barrier of disability expressing a high level of acceptance towards their impairment. They report little dissonance, tension or frustration and seem to be well adjusted to their condition and within their life patterns. Even members from cluster 1 seem not to demonstrate a chaos narrative that often accommodates acute injury (Frank, 1995) exhibiting good order in their lives.

Disability acceptance was seen as a very important issue influencing the way sport participants with physical disability perceive their physical self. This particular finding as well as the lack of link found between Physical Self-Worth and Global Self-Esteem became relevant for theory discussion. These results suggest the need to go back and re-analyse the Sonstroem, Harlow & Josephs (1994) four-level modification of the EXSEM model presented in the review of literature (p.25). There is strong evidence that wheelchair sport participants with physical disability establish the link between the different sub-domains of the physical self and the Global Self-Esteem in an alternative way. This alternative way may include a closer relationship between Physical Self-Worth and Physical Acceptance, based on the ideas expressed by the majority of members from all the clusters in study three, and between this construct and Global Self-Esteem, providing the hierarchical organization of Exercise and Self-Esteem Model, with exercise efficacy on the bottom (situation specific) and Global Self-Esteem in the apex. Further research is needed to confirm this hypothesis.

Study three also showed that the use of clusters provided a useful continuum for understanding the development of self-perceptions in sport participants with physical disability. In particular, it allowed the ability to take a closer view of the way these athletes deal with their disability, with their personal feelings about their disability and its impact on their identity, and particularly to understand the role that sport plays in the formulation of their identity and in their lives in general. Low and high Physical Self-Worth and Global Self-Esteem Profile clusters (1 and 3) provided a clear contrast about the main elements and mechanisms involved in the development of self-perceptions in both groups.

The use of a mixed methodology design combining both qualitative and quantitative approaches revelled very useful for data interpretation and results corroboration as it provided a permanent loop between quantitative (QUANT) and qualitative (Qual) data analysis and interpretation. Main results from study two (QUANT) were latter confirmed in study three (Qual) which provided in-depth and a more detailed interpretation about the way disability athletes perceive their physical self, as well as to clarify the differences between this particular group and other groups without disability. After all the QUANT / Qual methodology turned to be a QUANT /QUAL one (Tashakkori & Teddlie, 1998) based on the importance of the findings from study three and its contribution for the understanding of self-perceptions in the physical domain in sport participants with physical disability.

However, these differences might have been more consistent if comparison had been possible with sedentary wheelchair individuals. A positive affect was described even among lower Physical Self-Worth and lower self esteem members. They often linked this with their sport participation. Those who perceived their Physical Self-Worth and their self-esteem in a poor way may not have relatively such lower self-perceptions as a consequence of the positive boost produced by their participation in exercise and sport events. Previous research has found that improvements are more likely to occur in groups who are initially low in self-confidence, self-esteem and Physical Self-Worth.

6.1.3. PRACTICAL ISSUES

For the present study, impaired body is viewed as a social issue to be registered in a number of ways. Body is socially and culturally constructed based on the lived experiences of people with disability, in a close relation with the self and this can be seen as a major linking point between disability and self-identity. People with physical disability perceive disability through their bodies and through the social relationships they establish with others in encounters where the body plays a determinant role. The "impaired body has a history and is as much a cultural phenomenon as it is a biological entity" (Paterson, & Hughes, 1999; p.600)

The qualitative study (study three) revealed the important role that sport and exercise plays in people with physical disabilities lives. The majority of the interviewees expressed the importance that sport involvement had in their lives increasing peoples with physical disabilities autonomy as well as self-confidence in daily life routines such as showering, pushing the chair, getting in and out of the car, climbing up and down the sidewalk or the stairs.

On the other hand, many of the participants mentioned that sport and exercise also plays an important role in their personal achievement. Some interviewees mentioned that they feel better prepared to face life and to overcome daily life problems and obstacles as they are used to deal with victories and losses, to cope better with stressful situations and to manage frustration and lack of motivation during their sport carers. These skills allow people to control their lives as well as to construct and manage their selfhood based on their daily life successful and unsuccessful experiences, i.e., based on their personal biographies. Disability sport socialization plays an important role in the construction of a disability (sport) identity enhancing the establishment of positive self-perceptions which are very useful in other context of life rather than the sport arena (Williams, 1994a, 1994b). Data gathered in this study focused on the direct experience of the sporting lives of people with disabilities and their identities are perceived as a complex phenomenon that is built up over their lives and over their careers, and it will influence the content of those identities over time.

The sport arena proved to be an important context where people with physical impairment find opportunities to experience new challenges to test their capacities, to increase confidence and formulate stronger views of their bodies and eventually a stronger sense of self as well as to experience exposure to social assessment. People with physical disabilities find in the Sport arena the opportunity, frequently denied in other social contexts, to express all their potential. Most of the participants in this study reported their sport experiences as important moments in their lives. Moments where they learn they were able to perform an achieve success but also other moments where defeat was also important and useful because it provided knowledge and experience perceived as useful to use in future situations, both in sport and in life contexts. Disability

is a socially constructed entity very much influenced by cognitive appraisal of the self, based on past success and failure experiences. Exercise and sport is perceived by participants as a highly beneficial arena to provide opportunities to practise the most diverse sport and social interactions. The social construction of disability is centred on the physical body and on its adaptations to a diverse set of rules, expectations and values imposed by society.

Sport is an important vehicle to promote disability issues and to demystify the idea of "broken bodies" or "faulty minds" (Hughes,2002) which based on the medical model of disability have negatively influenced the social view of disability. Social interaction in disability Sport contexts also provides the opportunity to "prove" that people with physical disabilities have an important and active role both in their lives as well as in society.

From a sociological point of view support was found for the importance of significant other´s to the construction of individuals with physical disabilities self-perceptions (Sherrill, 1997) and individual identity (Williams & Taylor, 1994). Sport socialization occurs through the social relationships established and maintained with others. These "others" are usually distinguished between those who are "significant" and those who are not. Participants in this study mentioned the importance of significant others opinion to the way they perceive themselves in the physical domain, particularly in sub-dimensions such as Sport Competence and Body Attractiveness. However, it was also clear that these opinions were important only if they were expressed by peers, close friend (best mates or girlfriends) and relatives and they were perceived as not important if expressed by other people.

Study three provided further support for the role of friends with disability and veterans as initial socializing agents into wheelchair sport (Hopper, 1982, Zoerink, 1992, Williams & Kolkka, 1998). Some participants from clusters 2 and 3 expressed the important contribution of more experienced athletes (veterans) as well as friends participating in disability Sport (peers) as the major contributors as the main initial socializing agents. These agents play an important role on the transmission of an independent disability sport

subculture which will help beginners (novices) modelling their wheelchair sport identity construction.

Social comparison is probably a much more complex process in people with disability, because judgement may be based on the comparison with different peers with and without disability depending on the type of environmental encounters occurring. In the present study athletes with low Physical Self-Worth and low Global Self-Esteem profile tend to compare themselves with other wheelchair athletes of a similar level while high Physical Self-Worth and high Global Self-Esteem profile athletes prefer to compare themselves with other elite wheelchair sport athletes (at an international level) as well as with sedentary individuals with similar characteristics but without disability.

Another important idea expressed by the majority of the participants in study three is the importance of individual body projects (Shilling, 1993) for individuals with physical disabilities. These body projects maybe seen as important mechanisms to improve physical self-perceptions considering that the bodies can be worked and accomplished as part of an individual's self identity, accepting its appearance, size and shape which are potentially opened for reconstruction. Individual body projects involve two main ideas frequently mentioned as important to the construction of the physical self in groups with physical disabilities. First, individual body projects in "impaired bodies" can only be possible if individual body acceptance and disability acceptance occurs. A crucial idea found in study three is the disability acceptance and the way people with physical disabilities accept and manage their bodies and their disability. Secondly, individual body projects in disability sport arena assume the construction of healthy disabled bodies, and this idea supports the possibility to change the disabled body as well as a new vision about the potential of the disabled body and the power people with physical disabilities have to decide about their bodies and to control their own lives.

For too many years disability studies banished the body from its debates. The body disappeared from disability discourse because "to mention biology, to admit pain, to confront our impairments has been to risk the oppressors seizing on evidence that disability is really about physical limitations after all"

(Shakespeare, 1992, p.40). However, in this study the body is perceived as a key issue for disability. In spite of all negative associations, forgetting the body and "leaving out impairment means that it becomes difficult to distinguish disability from other forms of oppression" (Marks, 1999; p.115).

The social model of disability, in the dualistic tradition, defined impairment solely in biological terms and thus denied its social nature (Hughes, & Paterson, 1997). If impairment was the opposite of disability, and disability was socially constructed, then impairment must be biologically constructed. On the other hand, if impairment must be devoid of social meaning, than it should also be separate from the self that is socially constructed (Hughes, 2002). However, the reality presented in this study through the experiences lived by a group of wheelchair sport participants with physical disability showed that impairment is not just biologically constructed. Impairment has social implications in the way people with disability are perceived by others, and those implications are commonly negative and punishing for them as they frequently experience segregational attitudes, exclusion and stigma.

6.2. – LIMITATIONS OF THE STUDY

The major caveat in study two is the influence of the sample size on the reported factor structure. However, this caveat has to be set against the problems of wheelchair athlete populations, which are limited due to the small number of participants involved.

The recruitment process provided some limitation to the selection of a similar number of participants from each cluster for the interviewing process. The low availability for voluntary participation and provided informed consent found in individuals with low Physical Self-Worth and low Global Self-Esteem reduced the number of participants from cluster 1 to take part in the interviewing process (study three). This was even more limiting when one of the participants decided to stop the interview for personal reasons. This situation meant less available information to confirm or disconfirm the hypothetical differences in the pattern found among clusters.

The interviews were conducted in Portuguese language and latter transcribed and translated into English language. This process may cause some additional difficulties for data interpretation and content analysis and may be viewed as a limitation. The interviewing skills and the lack of experience of the researcher may have also caused additional limitations to the study. A more experienced interviewer might have obtained more in-depth information from the different participants.

The low academic status of some of the interviewees may also be seen as an obstacle for the in-depth of the research interviews. Difficulties were found in particular when people were asked to justify or argue their points of view. There was a limited response to some of the more abstract concepts such as self-esteem and Physical Self-Worth.

The theoretical concepts used in the interview guide referring to the different pre-determined categories used for the interview data analysis were perceived as a conceptual limitation to the study. Verbal skills regarding these difficult concepts had to be used in order to obtain clarity and deepness of the different ideas and opinions expressed by the interviewees about of each one of them.

Another limitation is the partial view of the entire "picture" in study three, analysing only the self-perceptions of active individuals with physical disability and leaving out the sedentary individual's view of the body. However, this should be seen as the first step into a broader project with the next step focussing on the wheelchair sedentary individual's opinion about their physical self.

6.3. – IMPLICATIONS FOR RESEARCH AND PRACTICE

The major implication to research and practice was the use of a worldwide standardized instrument – the PSPP - in the assessment of physical self-perceptions in wheelchair sport participants. Many studies have been conducted with other instruments, basically scales to assess self-esteem and other instruments assessing other psychological variables such as stress and mood. However, many doubts still exist about the development of self-perceptions in

the physical domain. The present research provided some contribution to clarify some aspects of the physical self in this group and established a positive link between the theoretical models assessed using standardized instruments and empirical knowledge told by each one of the participants, in their own words, the way they lived and experienced it.

6.3.1. – FUTURE RESEARCH

There is also a need to develop a second qualitative study using interviews with sedentary wheelchair users with physical disability in order to understand their personal opinions and views about their physical selves. The aim of this study would be to improve knowledge about people's with physical disability self-perceptions towards their body and achieve a richer view of their side of this "picture".

PSPPp revelled to be a sensitive instrument to be used in groups with physical disabilities in spite of the difference found in the factor structure. Support was found in the Qualitative study suggesting that people with physical disabilities perceive their physical self through feeling related with their Physical Confidence (Sport Competence and Physical Condition) as well as Body Attractiveness. However, improvements may be necessary to improve the sensibility of the instrument. An important topic is the type of comparison asked in the instruments, which in the case of people with physical disability have completely different meanings considering that in some cases they are self-referenced, in other cases they are referenced on other people with physical disability and, in other situations they might be referenced on people without disability.

Further research is needed to confirm or disconfirm the lack of relationship between Physical Self-Worth and Global Self-Esteem in groups with similar characteristics. There is a need to analyse exercise effects as well as time effects using PSPPp in physical activity and disability sport programmes for a more complex understanding of the entire process.

6.3.2. – PRACTICAL IMPLICATIONS

- Provide some insight about the key elements perceived as important for the development of the different sub-dimensions of the physical self in active wheelchair users. These elements might be of very useful application in exercise and physical activity intervention community programmes in order to promote mental well-being. These elements are based on self-consciousness of their bodies, accepting their bodies and understanding their limitations but also their capacities, their ability to perform different tasks and learning what their bodies can do.

- Emphasis on the importance of significant other's and individual comparison to the establishment of self-perceptions in the physical domain.

- Evidence to the necessity to improve self-esteem and physical self-perceptions in groups with physical disability.

- Provide opportunities to demonstrate how to best facilitate self-development in this population.

- Evidence for the importance of exercise to mental health and physical and psychological well-being, in groups with physical impairment as perceived health benefits result from doing sport.

- Evidence of personal achievement, in people with physical disability, through sport and exercise. Major benefits are perceived both in social as well as in professional contexts.

- Support for a holistic view of the body as a reflex of an holistic view of the rehabilitation process.

- Evidence for the importance of lived sport experiences and daily life experiences for the establishment of positive feelings about sport competence and physical condition in wheelchair sport participants.

- Low physical self-worth and low self esteem is associated with negative feelings about the body, lack of confidence and displeasure with the body while high physical self-worth and high self-esteem is associated with positive and pleasant feelings about the body as well as pleasant feelings about sensuality of the body and about affective expressions from others.

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APPENDIX A

FREQUENCIES – FEMALE UNIVERSITY STUDENTS (n=391)

Table I – Statistics of age variable – female university students

Statistics AGE	
Valid	391
Missing	0
Mean	21.61
Mode	21
Std. Deviation	2.72
Minimum	18
Maximum	40

Table II – Frequency table of age group variable – female university students

Age group		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	adolescence (8-20 yrs)	141	36.1	36.1	36.1
	juvenile adulticia (21-40 yrs)	250	63.9	63.9	100.0
	Total	391	100.0	100.0	

FREQUENCIES – MALE UNIVERSITY STUDENTS (n=181)

Table III – Statistics of age variable – male university students

Statistics AGE		
N	Valid	181
	Missing	0
Mean		22.03
Mode		20
Std. Deviation		3.28
Minimum		18
Maximum		40

Table IV – Frequency table of age group variable – male university students

Age group		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	adolescence (8-20 yrs)	64	35.4	35.4	35.4
	juvenile adulticia (21-40 yrs)	117	64.6	64.6	100.0
	Total	181	100.0	100.0	

FREQUENCIES – FEMALE SECONDARY SCHOOL STUDENTS (n=255)

Table V – Statistics of age variable – female secondary school students

Statistics AGE	
Valid	255
Missing	0
Mean	16.82
Mode	16
Std. Deviation	1.07
Minimum	15
Maximum	21

Table VI – Frequency table of age group variable – female secondary school students

Age group		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	adolescence (8-20 yrs)	253	99.2	99.2	99.2
	juvenile adulticia (21-40 yrs)	2	0.8	0.8	100.0
	Total	255	100.0	100.0	

FREQUENCIES – MALE SECONDARY SCHOOL STUDENTS s (n=225)

Table VII – Statistics of age variable – male secondary school students

Statistics AGE		
N	Valid	225
	Missing	0
Mean		17.43
Mode		16
Std. Deviation		1.64
Minimum		15
Maximum		25

Table VIII – Frequency table of age group variable – male secondary school students

Age group		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	adolescence (8-20 yrs)	212	94.2	94.2	94.2
	juvenile adulticia (21-40 yrs)	13	5.8	5.8	100.0
	Total	225	100.0	100.0	

PRINCIPAL COMPONENT ANALYSIS WITH VARIMAX ROTATION, LIMITED TO FOUR FACTORS – PORTUGUESE UNIVERSITARY FEMALE STUDENTS

Table IX – Total of variance explained for EFA limited to four factors – Portuguese university female students

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6,364	26,518	26,518	6,364	26,518	26,518	3,474	14,475	14,475
2	2,358	9,825	36,344	2,358	9,825	36,344	3,121	13,006	27,481
3	1,505	6,273	42,616	1,505	6,273	42,616	2,740	11,418	38,899
4	1,261	5,256	47,873	1,261	5,256	47,873	2,154	8,974	47,873
5	1,115	4,646	52,519						
6	1,007	4,194	56,713						
7	,901	3,756	60,469						

Extraction Method: Principal Component Analysis.

Table X – Rotated Component Matrix for EFA limited to four factors – Portuguese university female students

Rotated Component Matrix(a)

	Component			
	1	2	3	4
PSPP 1				
PSPP 2	,469			
PSPP 3		,718		
PSPP 4			,664	
PSPP 6	,623			
PSPP 7	,534			
PSPP 8		,701		
PSPP 9			,560	
PSPP 11	,401			,562
PSPP 12	,430			
PSPP 13		,734		
PSPP 14			,699	
PSPP 16	,628			
PSPP 17				,617
PSPP 18		,488		-,485
PSPP 19			,630	
PSPP 21				,596
PSPP 22	,619			
PSPP 23		,[illegible]		

PSPP 24			,550	
PSPP 26	,541			
PSPP 27	,704			
PSPP 28		,741		
PSPP 29			,599	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 6 iterations.

PRINCIPAL COMPONENT ANALYSIS WITH VARIMAX ROTATION, LIMITED TO FOUR FACTORS – PORTUGUESE UNIVERSITARY MALE STUDENTS

Table XI – Total of variance explained for EFA limited to four factors – Portuguese university male students

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	7,519	31,328	31,328	7,519	31,328	31,328	4,150	17,292	17,292
2	2,572	10,717	42,045	2,572	10,717	42,045	3,403	14,179	31,471
3	1,387	5,780	47,825	1,387	5,780	47,825	2,925	12,187	43,658
4	1,299	5,414	53,240	1,299	5,414	53,240	2,300	9,581	53,240
5	1,246	5,191	58,430						
6	,958	3,991	62,421						

Extraction Method: Principal Component Analysis.

Table XII – Rotated Component Matrix for EFA limited to four factors – Portuguese university male students

	Component			
	1	**2**	**3**	**4**
PSPP 1	,435			,482
PSPP 2				,685
PSPP 3			,646	
PSPP 4		,766		
PSPP 6	,549	,419		
PSPP 7	,404		,471	
PSPP 8			,695	
PSPP 9		,670		
PSPP 11	,660			

PSPP 11	,660			
PSPP 12	,475			,577
PSPP 13			,669	
PSPP 14		,690		
PSPP 16	,466			
PSPP 17	,680			
PSPP 18		,613		
PSPP 19				,433
PSPP 21	,644			
PSPP 22	,616			
PSPP 23			,474	
PSPP 24		,687		
PSPP 26	,683			
PSPP 27	,558		,418	
PSPP 28			,651	
PSPP 29		,445		,574

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 8 iterations.

APPENDIX B

RELIABILITY PORTUGUESE UNIVERSITY FEMALE STUDENTS

RELIABILITY ANALYSIS - SCALE (ALPHA) FOR CONDITION DIMENSION

		Mean	Std Dev	Cases
1.	PSPP2	2.0767	.8347	391.0
2.	PSPP7	2.2660	1.0357	391.0
3.	PSPP12	2.1458	.8300	391.0
4.	PSPP22	2.5064	.8737	391.0
5.	PSPP27	2.2174	.7520	391.0

Correlation Matrix

	PSPP2	PSPP7	PSPP12	PSPP22	PSPP27
PSPP2	1.0000				
PSPP7	.2640	1.0000			
PSPP12	.4168	.3276	1.0000		
PSPP22	.2630	.4090	.3399	1.0000	
PSPP27	.3165	.3174	.3640	.4213	1.0000

N of Cases = 391.0

Statistics for	Mean	Variance	Std Dev	N of Variables
Scale	11.2123	8.9010	2.9835	5

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	2.2425	2.0767	2.5064	.4297	1.2069	.0269

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.7574	.5654	1.0727	.5072	1.8970	.0362

Inter-item Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.3440	.2630	.4213	.1583	1.6018	.0032

RELIABILITY ANALYSIS - SCALE (ALPHA)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PSPP2	9.1355	6.3893	.4302	.2169	.6884
PSPP7	8.9463	5.5740	.4610	.2263	.6840
PSPP12	9.0665	6.1238	.5083	.2751	.6588
PSPP22	8.7059	5.9671	.5085	.2819	.6577
PSPP27	8.9949	6.4359	.4979	.2608	.6659

Analysis of Variance

Source of Variation	Sum of Sq.	DF	Mean Square	F	Prob.
Between People	694.2762	390	1.7802		
Within People	824.8000	1564	.5274		
Between Measures	42.0941	4	10.5235	20.9743	.0000
Residual	782.7059	1560	.5017		
Total	1519.0762	1954	.7774		
Grand Mean	2.2425				

Intraclass Correlation Coefficient

Two-Way Mixed Effect Model (Consistency Definition):
People Effect Random, Measure Effect Fixed
Single Measure Intraclass Correlation = .3376*
95.00% C.I.: Lower = .2901 Upper = .3878

F = 3.5481 DF = (390, 1560.0) Sig. = .0000 (Test Value = .0000)
Average Measure Intraclass Correlation = .7182**
95.00% C.I.: Lower = .6714 Upper = .7600
F = 3.5481 DF = (390, 1560.0) Sig. = .0000 (Test Value = .0000)
*: Notice that the same estimator is used whether the interaction effect is present or not.
**: This estimate is computed if the interaction effect is absent, otherwise ICC is not estimable.

Hotelling's T-Squared = 78.4006 F = 19.4494 Prob. = .0000
Degrees of Freedom: Numerator = 4 Denominator = 387

Reliability Coefficients 5 items

Alpha = .7182 Standardized item alpha = .7239

RELIABILITY ANALYSIS - SCALE (ALPHA) FOR BODY DIMENSION

		Mean	Std Dev	Cases
1.	PSPP3	2.2506	.8555	391.0
2.	PSPP8	2.1739	.9421	391.0
3.	PSPP13	2.4527	1.0704	391.0
4.	PSPP23	2.2302	.8340	391.0
5.	PSPP28	2.3171	.8544	391.0

Correlation Matrix

	PSPP3	PSPP8	PSPP13	PSPP23	PSPP28
PSPP3	1.0000				
PSPP8	.4198	1.0000			
PSPP13	.3882	.4404	1.0000		
PSPP23	.4005	.4286	.4804	1.0000	
PSPP28	.4277	.3964	.5267	.4910	1.0000

N of Cases = 391.0

Statistics for	Mean	Variance	Std Dev	N of Variables
Scale	11.4246	11.4962	3.3906	5

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	2.2849	2.1739	2.4527	.2788	1.1282	.0114

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.8382	.6956	1.1458	.4502	1.6473	.0351

Inter-item Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.4400	.3882	.5267	.1385	1.3569	.0020

RELIABILITY ANALYSIS - SCALE (ALPHA)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PSPP3	9.1739	8.1799	.5281	.2855	.7695
PSPP8	9.2506	7.7319	.5490	.3060	.7637
PSPP13	8.9719	6.9300	.6069	.3830	.7475
PSPP23	9.1944	7.9980	.5941	.3570	.7506
PSPP28	9.1074	7.8397	.6117	.3874	.7447

Analysis of Variance

Source of Variation	Sum of Sq.	DF	Mean Square	F	Prob.
Between People	896.7049	390	2.2992		
Within People	755.6000	1564	.4831		
Between Measures	17.8598	4	4.4650	9.4415	.0000
Residual	737.7402	1560	.4729		
Total	1652.3049	1954	.8456		
Grand Mean	2.2849				

Intraclass Correlation Coefficient

Two-Way Mixed Effect Model (Consistency Definition):
People Effect Random, Measure Effect Fixed
Single Measure Intraclass Correlation = .4358*
95.00% C.I.: Lower = .3881 Upper = .4851
F = 4,8619 DF = (390, 1560.0) Sig. = .0000 (Test Value = .0000)
Average Measure Intraclass Correlation = ,7943**
95.00% C.I.: Lower = .7602 Upper = .8249
F = 4.8619 DF = (390, 1560.0) Sig. = .0000 (Test Value = .0000)
*: Notice that the same estimator is used whether the interaction effect is present or not.
**: This estimate is computed if the interaction effect is absent, otherwise ICC is not estimable.

Hotelling's T-Squared = 30.5446 F = 7.5774 Prob. = .0000
Degrees of Freedom: Numerator = 4 Denominator = 387

Reliability Coefficients 5 items

Alpha = .7943 Standardized item alpha = .7971

RELIABILITY ANALYSIS-SCALE (ALPHA) FOR STRENGTH DIMENSION

		Mean	Std Dev	Cases
1.	PSPP4	2.4757	.8436	391.0
2.	PSPP9	2.1867	.8311	391.0
3.	PSPP14	2.4731	.8937	391.0
4.	PSPP19	2.2762	.7716	391.0
5.	PSPP24	2.1816	.7944	391.0
6.	PSPP29	2.1944	.7633	391.0

Correlation Matrix

	PSPP4	PSPP9	PSPP14	PSPP19	PSPP24	PSPP29
PSPP4	1.0000					
PSPP9	.3375	1.0000				
PSPP14	.2687	.2778	1.0000			
PSPP19	.3294	.2393	.3827	1.0000		
PSPP24	.2840	.3447	.2651	.3405	1.0000	
PSPP29	.3180	.2579	.3460	.4615	.4026	1.0000

RELIABILITY ANALYSIS - SCALE (ALPHA)

N of Cases = 391.0

Statistics for	Mean	Variance	Std Dev	N of Variables
Scale	13.7877	10.4343	3.2302	6

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	2.2980	2.1816	2.4757	.2941	1.1348	.0199

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.6683	.5826	.7986	.2160	1.3707	.0067

Inter-item Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.3237	.2393	.4615	.2223	1.9289	.0036

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PSPP4	11.3120	7.6255	.4502	.2112	.7093
PSPP9	11.6010	7.7686	.4263	.2040	.7159
PSPP14	11.3146	7.4418	.4500	.2169	.7106
PSPP19	11.5115	7.6146	.5224	.3058	.6895
PSPP24	11.6061	7.6855	.4808	.2515	.7004
PSPP29	11.5934	7.6111	.5320	.3149	.6871

Analysis of Variance

Source of Variation	Sum of Sq.	DF	Mean Square	F	Prob.
Between People	678.2302	390	1.7391		
Within People	924.5000	1955	.4729		
Between Measures	38.8683	5	7.7737	17.1162	.0000
Residual	885.6317	1950	.4542		
Total	1602.7302	2345	.6835		
Grand Mean	2.2980				

Intraclass Correlation Coefficient

Two-Way Mixed Effect Model (Consistency Definition):
People Effect Random, Measure Effect Fixed
Single Measure Intraclass Correlation = .3204*
95.00% C.I.: Lower = .2768 Upper = .3674
F = 3.8291 DF = (390, 1950.0) Sig. = .0000 (Test Value = .0000)
Average Measure Intraclass Correlation = .7388**
95.00% C.I.: Lower = .6966 Upper = .7770
F = 3.8291 DF = (390, 1950.0) Sig. = .0000 (Test Value = .0000)
*: Notice that the same estimator is used whether the interaction effect is present or not.
**: This estimate is computed if the interaction effect is absent, otherwise ICC is not estimable.

Hotelling's T-Squared = 80.0348 F = 15.8428 Prob. = .0000
Degrees of Freedom: Numerator = 5 Denominator = 386

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients 6 items

Alpha = .7388 Standardized item alpha = .7417

PARTIAL CORRELATIONS – FEMALE UNIVERSITY STUDENTS (SAMPLE A+B)

--- PARTIAL CORRELATION COEFFICIENTS ---

Zero Order Partials

	SPORT	CONDIT	BODY	STRENGTH	GSE	PSW
SPORT	1,0000	,6929	,3195	,5102	,3190	,5231
	(0)	(389)	(389)	(389)	(389)	(389)
	P= ,	P= ,000	P= ,000	P= ,000	P= ,000	P= ,000
CONDIT	,6929	1,0000	,3667	,4978	,3121	,5516
	(389)	(0)	(389)	(389)	(389)	(389)
	P= ,000	P= ,	P= ,000	P= ,000	P= ,000	P= ,000
BODY	,3195	,3667	1,0000	,2289	,4593	,7235
	(389)	(389)	(0)	(389)	(389)	(389)
	P= ,000	P= ,000	P= ,	P= ,000	P= ,000	P= ,000
STRENGTH	,5102	,4978	,2289	1,0000	,2616	,4180
	(389)	(389)	(389)	(0)	(389)	(389)
	P= ,000	P= ,000	P= ,000	P= ,	P= ,000	P= ,000
GSE	,3190	,3121	,4593	,2616	1,0000	,5160
	(389)	(389)	(389)	(389)	(0)	(389)
	P= ,000	P= ,000	P= ,000	P= ,000	P= ,	P= ,000
PSW	,5231	,5516	,7235	,4180	,5160	1,0000
	(389)	(389)	(389)	(389)	(389)	(0)
	P= ,000	P= ,000	P= ,000	P= ,000	P= ,000	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

--- PARTIAL CORRELATION COEFFICIENTS ---

Controlling for.. PSW

	SPORT	CONDIT	BODY	STRENGTH	GSE
SPORT	1,0000	,5688	-,1003	,3765	,0672
	(0)	(388)	(388)	(388)	(388)
	P= ,	P= ,000	P= ,048	P= ,000	P= ,185
CONDIT	,5688	1,0000	-,0562	,3527	,0385
	(388)	(0)	(388)	(388)	(388)
	P= ,000	P= ,	P= ,268	P= ,000	P= ,449
BODY	-,1003	-,0562	1,0000	-,1173	,1454
	(388)	(388)	(0)	(388)	(388)
	P= ,048	P= ,268	P= ,	P= ,021	P= ,004
STRENGTH	,3765	,3527	-,1173	1,0000	,0590
	(388)	(388)	(388)	(0)	(388)
	P= ,000	P= ,000	P= ,021	P= ,	P= ,245
GSE	,0672	,0385	,1454	,0590	1,0000
	(388)	(388)	(388)	(388)	(0)
	P= ,185	P= ,449	P= ,004	P= ,245	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

PARTIAL CORRELATIONS – MALE UNIVERSITY STUDENTS (SAMPLE A+B)

--- PARTIAL CORRELATION COEFFICIENTS ---

Zero Order Partials

	SPORT	CONDIT	BODY	STRENGTH	GSE	PSW
SPORT	1,0000	,7085	,5293	,3983	,4171	,6825
	(0)	(179)	(179)	(179)	(179)	(179)
	P= ,	P= ,000	P= ,000	P= ,000	P= ,000	P= ,000
CONDIT	,7085	1,0000	,6327	,3968	,3567	,7183
	(179)	(0)	(179)	(179)	(179)	(179)
	P= ,000	P= ,	P= ,000	P= ,000	P= ,000	P= ,000
BODY	,5293	,6327	1,0000	,5065	,3590	,7366
	(179)	(179)	(0)	(179)	(179)	(179)
	P= ,000	P= ,000	P= ,	P= ,000	P= ,000	P= ,000
STRENGTH	,3983	,3968	,5065	1,0000	,3186	,4465
	(179)	(179)	(179)	(0)	(179)	(179)
	P= ,000	P= ,000	P= ,000	P= ,	P= ,000	P= ,000
GSE	,4171	,3567	,3590	,3186	1,0000	,4774
	(179)	(179)	(179)	(179)	(0)	(179)
	P= ,000	P= ,000	P= ,000	P= ,000	P= ,	P= ,000
PSW	,6825	,7183	,7366	,4465	,4774	1,0000
	(179)	(179)	(179)	(179)	(179)	(0)
	P= ,000	P= ,000	P= ,000	P= ,000	P= ,000	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

--- PARTIAL CORRELATION COEFFICIENTS ---

Controlling for.. PSW

	SPORT	CONDIT	BODY	STRENGTH	GSE
SPORT	1,0000	,4292	,0537	,1431	,1421
	(0)	(178)	(178)	(178)	(178)
	P= ,	P= ,000	P= ,474	P= ,055	P= ,057
CONDIT	,4292	1,0000	,2202	,1222	,0225
	(178)	(0)	(178)	(178)	(178)
	P= ,000	P= ,	P= ,003	P= ,102	P= ,765
BODY	,0537	,2202	1,0000	,2934	,0124
	(178)	(178)	(0)	(178)	(178)
	P= ,474	P= ,003	P= ,	P= ,000	P= ,869
STRENGTH	,1431	,1222	,2934	1,0000	,1340
	(178)	(178)	(178)	(0)	(178)
	P= ,055	P= ,102	P= ,000	P= ,	P= ,073
GSE	,1421	,0225	,0124	,1340	1,0000
	(178)	(178)	(178)	(178)	(0)
	P= ,057	P= ,765	P= ,869	P= ,073	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

PARTIAL CORRELATIONS – SPORT SCIENCES FEMALE UNIVERSITY STUDENTS (SAMPLE A)

--- PARTIAL CORRELATION COEFFICIENTS ---

Zero Order Partials

	SPORT	CONDIT	BODY	STRENGTH	GSE	PSW
SPORT	1,0000	,5871	,2994	,2426	,3709	,5868
	(0)	(78)	(78)	(78)	(78)	(78)
	P= ,	P= ,000	P= ,007	P= ,030	P= ,001	P= ,000
CONDIT	,5871	1,0000	,3356	,3103	,3318	,5110
	(78)	(0)	(78)	(78)	(78)	(78)
	P= ,000	P= ,	P= ,002	P= ,005	P= ,003	P= ,000
BODY	,2994	,3356	1,0000	,0815	,3854	,6571
	(78)	(78)	(0)	(78)	(78)	(78)
	P= ,007	P= ,002	P= ,	P= ,472	P= ,000	P= ,000
STRENGTH	,2426	,3103	,0815	1,0000	,1854	,3715
	(78)	(78)	(78)	(0)	(78)	(78)
	P= ,030	P= ,005	P= ,472	P= ,	P= ,100	P= ,001
GSE	,3709	,3318	,3854	,1854	1,0000	,5532
	(78)	(78)	(78)	(78)	(0)	(78)
	P= ,001	P= ,003	P= ,000	P= ,100	P= ,	P= ,000
PSW	,5868	,5110	,6571	,3715	,5532	1,0000
	(78)	(78)	(78)	(78)	(78)	(0)
	P= ,000	P= ,000	P= ,000	P= ,001	P= ,000	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

--- PARTIAL CORRELATION COEFFICIENTS ---

Controlling for.. PSW

	SPORT	CONDIT	BODY	STRENGTH	GSE
SPORT	1,0000	,4127	-,1412	,0327	,0686
	(0)	(77)	(77)	(77)	(77)
	P= ,	P= ,000	P= ,215	P= ,775	P= ,548
CONDIT	,4127	1,0000	-,0003	,1509	,0686
	(77)	(0)	(77)	(77)	(77)
	P= ,000	P= ,	P= ,998	P= ,184	P= ,548
BODY	-,1412	-,0003	1,0000	-,2324	,0348
	(77)	(77)	(0)	(77)	(77)
	P= ,215	P= ,998	P= ,	P= ,039	P= ,761
STRENGTH	,0327	,1509	-,2324	1,0000	-,0261
	(77)	(77)	(77)	(0)	(77)
	P= ,775	P= ,184	P= ,039	P= ,	P= ,819
GSE	,0686	,0686	,0348	-,0261	1,0000
	(77)	(77)	(77)	(77)	(0)
	P= ,548	P= ,548	P= ,761	P= ,819	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

PARTIAL CORRELATIONS – SPORT SCIENCES MALE UNIVERSITY STUDENTS (SAMPLE A)

--- PARTIAL CORRELATION COEFFICIENTS ---

Zero Order Partials

	SPORT	CONDIT	BODY	STRENGTH	GSE	PSW
SPORT	1,0000	,6483	,4932	,3179	,3066	,6546
	(0)	(141)	(141)	(141)	(141)	(141)
	P= ,	P= ,000	P= ,000	P= ,000	P= ,000	P= ,000
CONDIT	,6483	1,0000	,5829	,3160	,2954	,6768
	(141)	(0)	(141)	(141)	(141)	(141)
	P= ,000	P= ,	P= ,000	P= ,000	P= ,000	P= ,000
BODY	,4932	,5829	1,0000	,5155	,3259	,7309
	(141)	(141)	(0)	(141)	(141)	(141)
	P= ,000	P= ,000	P= ,	P= ,000	P= ,000	P= ,000
STRENGTH	,3179	,3160	,5155	1,0000	,2646	,4174
	(141)	(141)	(141)	(0)	(141)	(141)
	P= ,000	P= ,000	P= ,000	P= ,	P= ,001	P= ,000
GSE	,3066	,2954	,3259	,2646	1,0000	,4241
	(141)	(141)	(141)	(141)	(0)	(141)
	P= ,000	P= ,000	P= ,000	P= ,001	P= ,	P= ,000
PSW	,6546	,6768	,7309	,4174	,4241	1,0000
	(141)	(141)	(141)	(141)	(141)	(0)
	P= ,000	P= ,000	P= ,000	P= ,000	P= ,000	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

--- PARTIAL CORRELATION COEFFICIENTS ---

Controlling for.. PSW

	SPORT	CONDIT	BODY	STRENGTH	GSE
SPORT	1,0000	,3687	,0286	,0651	,0424
	(0)	(140)	(140)	(140)	(140)
	P= ,	P= ,000	P= ,735	P= ,442	P= ,616
CONDIT	,3687	1,0000	,1756	,0501	,0126
	(140)	(0)	(140)	(140)	(140)
	P= ,000	P= ,	P= ,037	P= ,554	P= ,882
BODY	,0286	,1756	1,0000	,3392	,0259
	(140)	(140)	(0)	(140)	(140)
	P= ,735	P= ,037	P= ,	P= ,000	P= ,760
STRENGTH	,0651	,0501	,3392	1,0000	,1064
	(140)	(140)	(140)	(0)	(140)
	P= ,442	P= ,554	P= ,000	P= ,	P= ,208
GSE	,0424	,0126	,0259	,1064	1,0000
	(140)	(140)	(140)	(140)	(0)
	P= ,616	P= ,882	P= ,760	P= ,208	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

PARTIAL CORRELATIONS – SOCIAL SERVICE & WELFARE FEMALE UNIVERSITY STUDENTS (SAMPLE B)

--- PARTIAL CORRELATION COEFFICIENTS ---

Zero Order Partials

	SPORT	CONDIT	BODY	STRENGTH	GSE	PSW
SPORT	1,0000	,6620	,2892	,5149	,2914	,4499
	(0)	(309)	(309)	(309)	(309)	(309)
	P= ,	P= ,000	P= ,000	P= ,000	P= ,000	P= ,000
CONDIT	,6620	1,0000	,3423	,4569	,2979	,4932
	(309)	(0)	(309)	(309)	(309)	(309)
	P= ,000	P= ,	P= ,000	P= ,000	P= ,000	P= ,000
BODY	,2892	,3423	1,0000	,2274	,4713	,7336
	(309)	(309)	(0)	(309)	(309)	(309)
	P= ,000	P= ,000	P= ,	P= ,000	P= ,000	P= ,000
STRENGTH	,5149	,4569	,2274	1,0000	,2658	,3614
	(309)	(309)	(309)	(0)	(309)	(309)
	P= ,000	P= ,000	P= ,000	P= ,	P= ,000	P= ,000
GSE	,2914	,2979	,4713	,2658	1,0000	,5053
	(309)	(309)	(309)	(309)	(0)	(309)
	P= ,000	P= ,000	P= ,000	P= ,000	P= ,	P= ,000
PSW	,4499	,4932	,7336	,3614	,5053	1,0000
	(309)	(309)	(309)	(309)	(309)	(0)
	P= ,000	P= ,000	P= ,000	P= ,000	P= ,000	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

--- PARTIAL CORRELATION COEFFICIENTS ---

Controlling for.. PSW

	SPORT	CONDIT	BODY	STRENGTH	GSE
SPORT	1,0000	,5665	-,0673	,4230	,0832
	(0)	(308)	(308)	(308)	(308)
	P= ,	P= ,000	P= ,237	P= ,000	P= ,144
CONDIT	,5665	1,0000	-,0331	,3436	,0648
	(308)	(0)	(308)	(308)	(308)
	P= ,000	P= ,	P= ,561	P= ,000	P= ,255
BODY	-,0673	-,0331	1,0000	-,0596	,1716
	(308)	(308)	(0)	(308)	(308)
	P= ,237	P= ,561	P= ,	P= ,296	P= ,002
STRENGTH	,4230	,3436	-,0596	1,0000	,1033
	(308)	(308)	(308)	(0)	(308)
	P= ,000	P= ,000	P= ,296	P= ,	P= ,069
GSE	,0832	,0648	,1716	,1033	1,0000
	(308)	(308)	(308)	(308)	(0)
	P= ,144	P= ,255	P= ,002	P= ,069	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

PARTIAL CORRELATIONS – SOCIAL SERVICE & WELFARE MALE UNIVERSITY STUDENTS (SAMPLE B)

--- PARTIAL CORRELATION COEFFICIENTS ---

Zero Order Partials

	SPORT	CONDIT	BODY	STRENGTH	GSE	PSW
SPORT	1,0000	,7692	,5065	,5547	,7801	,6632
	(0)	(36)	(36)	(36)	(36)	(36)
	P= ,	P= ,000	P= ,001	P= ,000	P= ,000	P= ,000
CONDIT	,7692	1,0000	,6651	,5615	,5778	,7332
	(36)	(0)	(36)	(36)	(36)	(36)
	P= ,000	P= ,	P= ,000	P= ,000	P= ,000	P= ,000
BODY	,5065	,6651	1,0000	,3532	,4984	,6636
	(36)	(36)	(0)	(36)	(36)	(36)
	P= ,001	P= ,000	P= ,	P= ,030	P= ,001	P= ,000
STRENGTH	,5547	,5615	,3532	1,0000	,5189	,4489
	(36)	(36)	(36)	(0)	(36)	(36)
	P= ,000	P= ,000	P= ,030	P= ,	P= ,001	P= ,005
GSE	,7801	,5778	,4984	,5189	1,0000	,6879
	(36)	(36)	(36)	(36)	(0)	(36)
	P= ,000	P= ,000	P= ,001	P= ,001	P= ,	P= ,000
PSW	,6632	,7332	,6636	,4489	,6879	1,0000
	(36)	(36)	(36)	(36)	(36)	(0)
	P= ,000	P= ,000	P= ,000	P= ,005	P= ,000	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

--- PARTIAL CORRELATION COEFFICIENTS ---

Controlling for.. PSW

	SPORT	CONDIT	BODY	STRENGTH	GSE
SPORT	1,0000	,5559	,1186	,3843	,5963
	(0)	(35)	(35)	(35)	(35)
	P= ,	P= ,000	P= ,484	P= ,019	P= ,000
CONDIT	,5559	1,0000	,3511	,3825	,1489
	(35)	(0)	(35)	(35)	(35)
	P= ,000	P= ,	P= ,033	P= ,019	P= ,379
BODY	,1186	,3511	1,0000	,0828	,0772
	(35)	(35)	(0)	(35)	(35)
	P= ,484	P= ,033	P= ,	P= ,626	P= ,650
STRENGTH	,3843	,3825	,0828	1,0000	,3240
	(35)	(35)	(35)	(0)	(35)
	P= ,019	P= ,019	P= ,626	P= ,	P= ,050
GSE	,5963	,1489	,0772	,3240	1,0000
	(35)	(35)	(35)	(35)	(0)
	P= ,000	P= ,379	P= ,650	P= ,050	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

REGRESSION FEMALE UNIVERITY STUDENTS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,724(a)	,523	,522	2,6430
2	,786(b)	,618	,616	2,3681
3	,799(c)	,638	,635	2,3090
4	,805(d)	,648	,645	2,2798

a Predictors: (Constant), Body attractiveness

b Predictors: (Constant), Body attractiveness, Sport competence

c Predictors: (Constant), Body attractiveness, Sport competence, Physical condition

d Predictors: (Constant), Body attractiveness, Sport competence, Physical condition, Physical strength

REGRESSION MALE UNIVERITY STUDENTS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,737(a)	,543	,540	2,59
2	,813(b)	,662	,658	2,24
3	,828(c)	,686	,681	2,16

a Predictors: (Constant), Body attractiveness

b Predictors: (Constant), Body attractiveness, Sport competence

c Predictors: (Constant), Body attractiveness, Sport competence, Physical condition

APPENDIX C

T-TEST RESULTS - PSPP sub-domains and RSE * gender

Table I - Samples A and B -University students

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SPORT	Equal variances assumed	,007	,935	-9,122	570	,000	-2,7889	,3057	-3,3894	-2,1884
	Equal variances not assumed			-9,134	351,732	,000	-2,7889	,3053	-3,3894	-2,1884
COND	Equal variances assumed	,882	,348	-9,457	570	,000	-3,0221	,3196	-3,6498	-2,3944
	Equal variances not assumed			-9,252	332,393	,000	-3,0221	,3266	-3,6647	-2,3795
BODY	Equal variances assumed	2,317	,128	-6,269	570	,000	-2,0679	,3299	-2,7159	-1,4200
	Equal variances not assumed			-6,440	375,027	,000	-2,0679	,3211	-2,6993	-1,4366
STREN	Equal variances assumed	1,196	,275	-5,888	570	,000	-1,7261	,2932	-2,3019	-1,1503
	Equal variances not assumed			-5,825	341,460	,000	-1,7261	,2963	-2,3089	-1,1433
PSW	Equal variances assumed	,283	,595	-7,762	570	,000	-2,6680	,3437	-3,3432	-1,9929
	Equal variances not assumed			-7,763	350,679	,000	-2,6680	,3437	-3,3440	-1,9921
GSE	Equal variances assumed	4,974	,026	-2,770	570	,006	-1,07	,39	-1,84	-,31
	Equal variances not assumed			-2,589	299,325	,010	-1,07	,42	-1,89	-,26

Table II – Sample C – Secondary school students

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
SPORT	Equal variances assumed	1,299	,255	-8,627	478	,000	-2,5443	,2949	-3,1238	-1,9648	
	Equal variances not assumed			-8,594	462,178	,000	-2,5443	,2960	-3,1261	-1,9626	
COND	Equal variances assumed	1,471	,226	-6,209	478	,000	-1,9009	,3061	-2,5025	-1,2994	
	Equal variances not assumed			-6,178	458,548	,000	-1,9009	,3077	-2,5056	-1,2962	
BODY	Equal variances assumed	1,807	,179	-6,695	478	,000	-2,0742	,3098	-2,6830	-1,4655	
	Equal variances not assumed			-6,727	476,864	,000	-2,0742	,3083	-2,6801	-1,4684	
STREN	Equal variances assumed	,324	,570	-4,869	478	,000	-1,3702	,2814	-1,9231	-,8173	
	Equal variances not assumed			-4,867	469,786	,000	-1,3702	,2815	-1,9234	-,8170	
PSW	Equal variances assumed	,618	,432	-6,550	478	,000	-2,0847	,3183	-2,7101	-1,4593	
	Equal variances not assumed			-6,565	474,388	,000	-2,0847	,3175	-2,7086	-1,4608	
GSE	Equal variances assumed	3,122	,078	-6,027	478	,000	-2,34	,39	-3,10	-1,57	
	Equal variances not assumed			-5,973	446,065	,000	-2,34	,39	-3,10	-1,57	

T-TEST RESULTS - PSPP sub-domains and GSE * Group

Table III - Samples A and B – Female university students

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Sport competence	Equal variances assumed	,017	,897	6,805	389	,000	2,7492	,4040	1,9549	3,5435
	Equal variances not assumed			6,882	124,589	,000	2,7492	,3995	1,9585	3,5399
Physical condition	Equal variances assumed	,273	,602	9,389	389	,000	3,7088	,3950	2,9322	4,4855
	Equal variances not assumed			9,680	127,848	,000	3,7088	,3831	2,9507	4,4669
Body attractiveness	Equal variances assumed	,843	,359	2,879	389	,004	1,3415	,4659	,4255	2,2576
	Equal variances not assumed			2,926	125,404	,004	1,3415	,4584	,4343	2,2488
Physical strength	Equal variances assumed	1,264	,262	6,396	389	,000	2,4670	,3857	1,7087	3,2253
	Equal variances not assumed			6,037	114,656	,000	2,4670	,4086	1,6576	3,2765
Physical self-worth	Equal variances assumed	2,471	,117	5,824	389	,000	2,6811	,4603	1,7761	3,5861
	Equal variances not assumed			6,145	132,033	,000	2,6811	,4363	1,8181	3,5442
GSE	Equal variances assumed	,545	,461	1,763	389	,079	,89	,51	-,10	1,88
	Equal variances not assumed			1,694	117,037	,093	,89	,53	-,15	1,93

T-TEST RESULTS - PSPP sub-domains and GSE * Group

Table IV - Samples A and B – Male university students

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
Sport competence	Equal variances assumed	5,587	,019	3,906	179	,000	2,33	,60	1,15	3,50	
	Equal variances not assumed			3,356	49,191	,002	2,33	,69	,93	3,72	
Physical condition	Equal variances assumed	,283	,595	4,624	179	,000	2,96	,64	1,70	4,22	
	Equal variances not assumed			4,329	53,708	,000	2,96	,68	1,59	4,33	
Body attractiveness	Equal variances assumed	,694	,406	3,998	179	,000	2,44	,61	1,24	3,65	
	Equal variances not assumed			4,407	67,217	,000	2,44	,55	1,34	3,55	
Physical strength	Equal variances assumed	,294	,589	2,192	179	,030	1,32	,60	,13	2,50	
	Equal variances not assumed			2,249	60,275	,028	1,32	,59	,15	2,49	
Physical self-worth	Equal variances assumed	,829	,364	3,930	179	,000	2,64	,67	1,31	3,96	
	Equal variances not assumed			3,697	54,000	,001	2,64	,71	1,21	4,07	
GSE	Equal variances assumed	,059	,808	,926	179	,356	,82	,89	-,93	2,57	
	Equal variances not assumed			,969	61,951	,336	,82	,85	-,87	2,52	

APPENDIX D

INDEPENDENT VARIABLES FREQUENCIES - WHEELCHAIR BASKETBALL PLAYERS

Frequency Table

Age group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	adolescence (8-20 yrs)	13	20,3	20,3	20,3
	juvenile adulticia (21-40 yrs)	39	60,9	60,9	81,3
	mediam adulticia (41-60)	12	18,8	18,8	100,0
	Total	64	100,0	100,0	

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	female	5	7,8	7,8	7,8
	male	59	92,2	92,2	100,0
	Total	64	100,0	100,0	

Frequency Table

Marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	maried	18	28,1	28,1	28,1
	single	43	67,2	67,2	95,3
	divorced	1	1,6	1,6	96,9
	coupling joint	2	3,1	3,1	100,0
	Total	64	100,0	100,0	

Frequency Table

Time since acquiring the disability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	until 4 yrs.	4	6,3	6,3	6,3
	4 to 10 yrs.	4	6,3	6,3	12,5
	more than 10 yrs.	56	87,5	87,5	100,0
	Total	64	100,0	100,0	

Frequency Table

Type of lesion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	paraplegia	23	35,9	35,9	35,9
	poliomyelitis	18	28,1	28,1	64,1
	spina bifida	9	14,1	14,1	78,1
	amputation	12	18,8	18,8	96,9
	outra	2	3,1	3,1	100,0
	Total	64	100,0	100,0	

Frequency Table

Lesion source

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	congenital	9	14,1	14,1	14,1
	acquired	55	85,9	85,9	100,0
	Total	64	100,0	100,0	

Frequency Table

Time of sports practice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	until 1 yr.	9	14,1	14,1	14,1
	2 -4 yrs.	16	25,0	25,0	39,1
	5-10 yrs.	15	23,4	23,4	62,5
	11 or more yrs.	24	37,5	37,5	100,0
	Total	64	100,0	100,0	

Frequency Table

Frequency of sport practice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	25	39,1	39,1	39,1
	2	22	34,4	34,4	73,4
	3	17	26,6	26,6	100,0
	Total	64	100,0	100,0	

Frequency Table

Functional classification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	,5	2	3,1	3,1	3,1
	1,0	4	6,3	6,3	9,4
	1,5	6	9,4	9,4	18,8
	2,0	6	9,4	9,4	28,1
	2,5	8	12,5	12,5	40,6
	3,0	5	7,8	7,8	48,4
	3,5	6	9,4	9,4	57,8
	4,0	20	31,3	31,3	89,1
	4,5	7	10,9	10,9	100,0
	Total	64	100,0	100,0	

Frequency Table

Competitive level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	national	45	70,3	70,3	70,3
	international	19	29,7	29,7	100,0
	Total	64	100,0	100,0	

TOTAL PSPP FACTORS DESCRIPTIVES - WHEELCHAIR BASKETBALL PLAYERS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Sport	64	10	24	16,61	3,20
Condition	64	9	24	16,44	3,18
Body	64	7	24	14,92	3,43
Strength	64	7	24	16,53	3,14
PSW	64	8	24	16,50	3,61
Valid N (listwise)	64				

PSPP FACTORS DESCRIPTIVES - FEMALE WHEELCHAIR BASKETBALL PLAYERS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Global Self-Esteem	5	20	26	23,60	2,88
Sport	5	10	18	14,60	3,21
Condition	5	10	18	15,20	3,11
Body	5	8	21	14,00	5,15
Strength	5	12	22	18,40	3,91
PSW	5	11	20	15,40	3,65
Valid N (listwise)	5				

PSPP FACTORS DESCRIPTIVES - MALE WHEELCHAIR BASKETBALL PLAYERS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Sport	59	11	24	16,78	3,17
Condition	59	9	24	16,54	3,19
Body	59	7	24	15,00	3,30
Strength	59	7	24	16,37	3,06
PSW	59	8	24	16,59	3,63
Valid N (listwise)	59				

GLOBAL SELF-ESTEEM DESCRIPTIVES - FEMALE WHEELCHAIR BASKETBALL PLAYERS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Global Self-Esteem	5	20	26	23,60	2,88
Valid N (listwise)	5				

GLOBAL SELF-ESTEEM DESCRIPTIVES - MALE WHEELCHAIR BASKETBALL PLAYERS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Global Self-Esteem	59	13	30	23,56	3,45
Valid N (listwise)	59				

PARTIAL CORRELATIONS – WHEELCHAIR BASKETBALL PLAYERS

--- PARTIAL CORRELATION COEFFICIENTS ---

Zero Order Partials

	SPORT_F	COND_F	BODY_F	STRENG_F	GSE	PSW_F
SPORT_F	1,0000	,7606	,2153	,4346	,0937	,5664
	(0)	(62)	(62)	(62)	(62)	(62)
	P= ,	P= ,000	P= ,088	P= ,000	P= ,461	P= ,000
COND_F	,7606	1,0000	,3069	,4654	-,1056	,4406
	(62)	(0)	(62)	(62)	(62)	(62)
	P= ,000	P= ,	P= ,014	P= ,000	P= ,406	P= ,000
BODY_F	,2153	,3069	1,0000	,3953	-,0344	,5177
	(62)	(62)	(0)	(62)	(62)	(62)
	P= ,088	P= ,014	P= ,	P= ,001	P= ,788	P= ,000
STRENG_F	,4346	,4654	,3953	1,0000	,0669	,4811
	(62)	(62)	(62)	(0)	(62)	(62)
	P= ,000	P= ,000	P= ,001	P= ,	P= ,599	P= ,000
GSE	,0937	-,1056	-,0344	,0669	1,0000	,1841
	(62)	(62)	(62)	(62)	(0)	(62)
	P= ,461	P= ,406	P= ,788	P= ,599	P= ,	P= ,145
PSW_F	,5664	,4406	,5177	,4811	,1841	1,0000
	(62)	(62)	(62)	(62)	(62)	(0)
	P= ,000	P= ,000	P= ,000	P= ,000	P= ,145	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

--- PARTIAL CORRELATION COEFFICIENTS ---

Controlling for.. PSW_F

	SPORT_F	COND_F	BODY_F	STRENG_F	GSE
SPORT_F	1,0000	,6908	-,1105	,2243	-,0130
	(0)	(61)	(61)	(61)	(61)
	P= ,	P= ,000	P= ,389	P= ,077	P= ,919
COND_F	,6908	1,0000	,1026	,3221	-,2116
	(61)	(0)	(61)	(61)	(61)
	P= ,000	P= ,	P= ,424	P= ,010	P= ,096
BODY_F	-,1105	,1026	1,0000	,1950	-,1542
	(61)	(61)	(0)	(61)	(61)
	P= ,389	P= ,424	P= ,	P= ,126	P= ,228
STRENG_F	,2243	,3221	,1950	1,0000	-,0252
	(61)	(61)	(61)	(0)	(61)
	P= ,077	P= ,010	P= ,126	P= ,	P= ,845
GSE	-,0130	-,2116	-,1542	-,0252	1,0000
	(61)	(61)	(61)	(61)	(0)
	P= ,919	P= ,096	P= ,228	P= ,845	P= ,

(Coefficient / (D.F.) / 2-tailed Significance)

" , " is printed if a coefficient cannot be computed

EXPLORATORY FACTOR ANALYSIS – WHEELCHAIR BASKETBALL PLAYERS

Factor Analysis

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,395	18,312	18,312	4,395	18,312	18,312	4,116	17,149	17,149
2	3,724	15,517	33,830	3,724	15,517	33,830	3,051	12,712	29,861
3	2,175	9,062	42,892	2,175	9,062	42,892	2,933	12,220	42,081
4	1,873	7,805	50,697	1,873	7,805	50,697	2,068	8,616	50,697
5	1,551	6,462	57,159						
6	1,355	5,646	62,805						
7	1,150	4,793	67,597						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix(a)

	Component			
	1	2	3	4
PSPP1				
PSPP2	,601			
PSPP3		,617		
PSPP4			,487	
PSPP6			,609	
PSPP7			,747	
PSPP8		,411		-,505
PSPP9		,632		
PSPP11	,795			
PSPP12	,836			
PSPP13			-,475	,438
PSPP14		,494		
PSPP16		,403		,529
PSPP17	,669			
PSPP18		,638		
PSPP19	,758			
PSPP21	,577			
PSPP22				,707
PSPP23	,494			
PSPP24			,491	
PSPP26			,517	,481
PSPP27			,602	
PSPP28		,778		
PSPP29	,574			

APPENDIX E

DESCRIPTIVES FOR PSPP FACTORS AND GLOBAL SELF-ESTEEM FEMALE BASKETBALL PLAYERS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Sport competence	17	13	23	18,12	2,45
Physical condition	17	14	23	19,47	2,90
Body attractiveness	17	12	22	16,82	2,92
Physical strength	17	6	24	17,29	3,84
Physical self-worth	17	12	24	18,71	3,51
GSE	17	28	40	33,82	4,14
Valid N (listwise)	17				

DESCRIPTIVES FOR PSPP FACTORS AND GLOBAL SELF-ESTEEM MALE BASKETBALL PLAYERS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Sport competence	69	10	24	17,32	2,80
Physical condition	69	9	23	17,32	2,85
Body attractiveness	69	8	22	16,07	3,10
Strength	69	7	23	15,94	3,02
Physical self worth	69	11	24	16,93	2,80
GSE	69	18	39	30,19	4,28
Valid N (listwise)	69				

EXPLORATORY FACTOR ANALYSIS - FEMALE BASKETBALL PLAYERS

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8,079	33,661	33,661	8,079	33,661	33,661	6,118	25,492	25,492
2	3,764	15,681	49,343	3,764	15,681	49,343	4,705	19,602	45,094
3	3,194	13,309	62,652	3,194	13,309	62,652	3,981	16,586	61,681
4	2,003	8,348	70,999	2,003	8,348	70,999	2,237	9,319	70,999
5	1,695	7,062	78,061						
6	1,397	5,819	83,881						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix(a)

	Component			
	1	2	3	4
PSPP1			,749	
PSPP2		,680		
PSPP3	,546		,704	
PSPP4	,819			
PSPP6	,586	,412		
PSPP7	,788			
PSPP8				,857
PSPP9	,968			
PSPP11		,633		
PSPP12		,606		
PSPP13			,658	-,638
PSPP14	,826			
PSPP16		,599		-,424
PSPP17		,631	,538	
PSPP18	,601	-,406		
PSPP19	,654	,547		
PSPP21		,749		
PSPP22		,741	,437	
PSPP23			,756	
PSPP24	,865			
PSPP26				
PSPP27		,486		,565
PSPP28			,925	
PSPP29	,604	,564		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 8 iterations.

EXPLORATORY FACTOR ANALYSIS – MALE BASKETBALL PLAYERS

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,914	20,476	20,476	4,914	20,476	20,476	3,508	14,617	14,617
2	2,478	10,327	30,802	2,478	10,327	30,802	2,966	12,356	26,973
3	2,088	8,700	39,502	2,088	8,700	39,502	2,589	10,788	37,761
4	1,763	7,346	46,848	1,763	7,346	46,848	2,181	9,087	46,848
5	1,636	6,818	53,666						
6	1,428	5,949	59,615						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix(a)

	Component			
	1	2	3	4
PSPP1	,400	,625		
PSPP2	,488			
PSPP3				,612
PSPP4		,621		
PSPP6			,469	
PSPP7				
PSPP8				,482
PSPP9		,756		
PSPP11	,612			
PSPP12	,729			
PSPP13	,627			,430
PSPP14			,540	
PSPP16			,745	
PSPP17				,534
PSPP18				,760
PSPP19		,562		
PSPP21	,724			
PSPP22			,650	
PSPP23	,664			
PSPP24		,698		
PSPP26			,574	
PSPP27			,549	
PSPP28	,454			
PSPP29		,580		

APPENDIX F

UNIVERSITY OF BRISTOL
Department of Exercise and Health Sciences

Perfil de Auto Percepção Física: PSPP-P
Versão Portuguesa

(Utilização sujeita a autorização prévia)

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Este questionário destina-se à realização de um trabalho de investigação na Área da Psicologia do Desporto. Trata-se de um instrumento que envolve a recolha de *informação confidencial* **pelo que** nunca **no decorrer deste trabalho** será divulgada a identificação dos indivíduos **nele** intervenientes.

Ao responder às questões faça-o de uma forma sincera e, por favor, não deixe qualquer questão por responder, pois disso dependerá o rigor científico deste trabalho.

Obrigado pela sua colaboração !

(Informação Confidencial)

1. Dados Biográficos

Nome :_____ **(utilize apenas as iniciais de cada nome)**

Idade:_____ **anos**

Data de nascimento: _____ /_____ / _____

Sexo:

Masculino ☐ **Feminino** ☐

Estado Civil:

Casado ☐ **Solteiro** ☐ **Divorciado** ☐ **Viúvo** ☐

A viver em união de facto ☐

Profissão/

Actividade:_____

_____

2. Dados relativos à prática desportiva

Há quanto tempo pratica a modalidade: _____ **anos**

Com que frequência: _____ **vezes por semana**

Qual o nível de competição em que participa:

Regional ☐ **Nacional** ☐ **Internacional** ☐ **Olímpico** ☐

Local de recolha da informação:

_____

Data de recolha da informação: ___ / ___ / ___

UNIVERSITY OF BRISTOL

Department of Exercise and Health Sciences

ESCALA DE AUTO - ESTIMA (Rosenberg, 1965)

Adaptação efectuada por José Pedro Leitão Ferreira (2001), Faculdade de Ciências do Desporto e Educação Física da Universidade de Coimbra, a partir da Rosenberg Self-Esteem Scale elaborada por Morris Rosenberg (1965).

Para cada item faça uma cruz sobre o rectângulo que corresponde à concepção de valor que tem por si próprio(a):

	Concordo completamente	Concordo	Discordo	Discordo completamente
1. Sinto que sou uma pessoa de valor, pelo menos num plano de igualdade com os outros	☐	☐	☐	☐
2. Sinto que tenho um bom número de qualidades.	☐	☐	☐	☐
3. Em termos gerais estou inclinado(a) a sentir que sou um(a) falhado(a).	☐	☐	☐	☐
4. Estou apto(a) para fazer coisas tão bem como a maioria das pessoas.	☐	☐	☐	☐
5. Sinto que não tenho muito de que me orgulhar.	☐	☐	☐	☐
6. Eu tomo uma atitude positiva perante mim mesmo(a)	☐	☐	☐	☐
7. No geral, estou satisfeito(a) comigo mesmo(a).	☐	☐	☐	☐
8. Gostava de ter mais respeito por mim mesmo(a).	☐	☐	☐	☐
9. Sinto-me por vezes inútil.	☐	☐	☐	☐
10. Por vezes penso que não sou nada bom (a).	☐	☐	☐	☐

OBRIGADO PELA SUA COLABORAÇÃO !

UNIVERSITY OF BRISTOL

Department of Exercise and Health Sciences

PERFIL DE AUTO-PERCEPÇÃO FÍSICA: PSPP

Tradução e adaptação efectuada por António Manuel Fonseca (Faculdade de Ciências do Desporto e de Educação Física da Universidade do Porto), Kenneth R. Fox e Maria João Almeida (*School of Education* da Universidade de Exeter), em 1995, do *Physical Self-Perception Profile* (PSPP), elaborado por Kenneth R. Fox (1990).

COMO SOU EU?

As afirmações que se seguem permitem que as pessoas se descrevam a elas próprias. Não há respostas certas ou erradas, uma vez que as pessoas são diferentes umas das outras. Para preencher este questionário, primeiro, decida qual das duas afirmações o descreve melhor. Depois, "vá" para o lado correspondente a essa afirmação e indique se ela é "Quase verdade" ou "Realmente verdade" PARA O SEU CASO PESSOAL.

EXEMPLO

Realmente verdade para mim	Quase verdade para mim				Quase verdade para mim	Realmente verdade para mim
		Algumas das pessoas são muito competitivas	**MAS**	Outras não são tão competitivas		

LEMBRE-SE DE ESCOLHER APENAS UMA DAS QUATRO OPÇÕES PARA CADA AFIRMAÇÃO.

Realmente verdade para mim	Quase verdade para mim				Quase verdade para mim	Realmente verdade para mim
		Algumas pessoas sentem que não são muito boas a praticar desporto	**Mas**	Outras sentem que são mesmo boas em qualquer desporto		
		Algumas pessoas não têm muita confiança acerca do seu nível de condição física	**Mas**	Outras sentem-se sempre confiantes de que mantêm uma excelente condição física		
		Algumas pessoas sentem que comparadas com a maioria têm um corpo atraente	**Mas**	Outras sentem que comparadas com a maioria o seu corpo não é propriamente atraente		
		Algumas pessoas sentem que são fisicamente mais fortes do que a maior parte das pessoas do seu sexo	**Mas**	Outras sentem que lhes falta força física quando comparadas com a maior parte das pessoas do seu sexo		
		Algumas pessoas sentem-se extremamente orgulhosas pelo que são e pelo que conseguem fazer fisicamente	**Mas**	Outras, por vezes, não se sentem propriamente orgulhosas pelo que são fisicamente		
		Algumas pessoas sentem que estão entre as melhores quando se trata de capacidades atléticas	**Mas**	Outras sentem que não estão entre as mais capazes quando se trata de capacidades atléticas		

Realmente verdade para mim	Quase verdade para mim			Quase verdade para mim	Realmente verdade para mim
		Algumas pessoas certificam-se de que participam em alguma forma regular de exercido fisico vigoroso	**Mas** Outras não conseguem muitas vezes participar regularmente num exercício fisico vigoroso		
		Algumas pessoas sentem que têm dificuldades em manter um corpo atraente	**Mas** Outras sentem que são facilmente capazes de manter os seus corpos com um aspecto atraente		
		Algumas pessoas sentem que os seus músculos são mais fortes do que os da maioria das outras pessoas do seu sexo	**Mas** Outras sentem que em geral os seus músculos não são exactamente tão fortes como a maioria das outras pessoas do seu sexo		
		Algumas pessoas, por vezes, não se sentem muito felizes com o modo como são ou com o que conseguem fazer fisicamente	**Mas** Outros sentem-se sempre felizes com o tipo de pessoas que são fisicamente		
		Algumas pessoas não têm muita confiança quando se trata de participar em actividades desportivas	**Mas** Outras estão entre as mais confiantes quando se trata de participar em actividades desportivas		
		Algumas pessoas não têm habitualmente um elevado nível de resistência e aptidão fisica	**Mas** Outras mantêm sempre um elevado nível de resistência e aptidão fisica		
		Algumas pessoas sentem-se embaraçadas pelos seus corpos quando se trata de vestir pouca roupa	**Mas** Outras não se sentem embaraçadas pelos seus corpos quando se trata de vestir pouca roupa		
		Quando se trata de situações que requerem força, algumas pessoas são das primeiras a avançar	**Mas** Quando se trata de situações que requerem força, algumas pessoas são das últimas a avançar		
		Quando se trata da sua parte fisica, algumas pessoas não se sentem muito confiantes	**Mas** Outras parecem ter uma sensação real de confiança na sua parte fisica		
		Algumas pessoas sentem que são sempre das melhores quando se trata de aderirem a actividades desportivas	**Mas** Outras sentem que não são das melhores quando se trata de aderirem a actividades desportivas		
		Algumas pessoas tendem a sentir-se algo desconfortáveis em ambientes de actividade fisica	**Mas** Outras sentem-se sempre confiantes e à vontade em ambientes de actividade fisica		
		Algumas pessoas sentem que são muitas vezes admiradas porque o seu fisico ou figura são considerados atraentes	**Mas** Outras raramente sentem que são admiradas pela aparência do seu corpo		

Realmente verdade para mim	Quase verdade para mim			Quase verdade para mim	Realmente verdade para mim
		Algumas pessoas tendem a ter falta de confiança no que se refere à sua força física	**Mas** Outras são extremamente confiantes no que se refere à sua força física		
		Algumas pessoas têm sempre um sentimento positivo acerca da sua parte física	**Mas** Outras, por vezes, não se sentem bem acerca da sua parte física		
		Algumas pessoas são, por vezes, um pouco mais lentas do que a maioria quando se trata de aprender novas habilidades em situações desportivas	**Mas** Outras parecem estar sempre entre as mais rápidas quando se trata de aprender novas habilidades desportivas		
		Algumas pessoas sentem-se extremamente confiantes acerca da sua capacidade para manter um exercício regular e a sua condição física	**Mas** Outras não se sentem tão confiantes acerca da sua capacidade para manter um exercício regular e a sua condição física		
		Algumas pessoas sentem que, comparadas com a maioria, o seu corpo não aparenta a melhor forma física	**Mas** Outras sentem que, comparadas com a maioria, o seu corpo aparenta sempre excelente forma física		
		Algumas pessoas sentem que são muito fortes e que têm músculos bem desenvolvidos, comparadas com a maioria	**Mas** Outras sentem que não são tão fortes e que os seus músculos não estão muito bem desenvolvidos		
		Algumas pessoas desejavam poder ter mais respeito pela sua parte física	**Mas** Outras têm sempre grande respeito pela sua parte física		
		Tendo oportunidade, algumas pessoas são sempre das primeiras a aderirem a actividades desportivas	**Mas** Outras pessoas por vezes retraem-se e não estão entre as primeiras a aderirem a actividades desportivas		
		Algumas pessoas sentem que comparadas com a maioria mantêm sempre um elevado nível de condição física	**Mas** Outras sentem que comparadas com a maioria o seu nível de condição física não é habitualmente tão elevado		
		Algumas pessoas são extremamente confiantes acerca da aparência do seu corpo	**Mas** Outras são um pouco envergonhadas acerca da aparência do seu corpo		
		Algumas pessoas sentem que não são tão boas como a maioria a lidar com situações que requerem força física	**Mas** Outras sentem que estão entre as melhores a lidar com situações que requerem força física		
		Algumas pessoas sentem-se extremamente satisfeitas com o tipo de pessoas que são fisicamente	**Mas** Outras sentem-se por vezes um pouco insatisfeitas com a sua parte física		

OBRIGADO PELA SUA COLABORAÇÃO!

APPENDIX G

PHYSICAL SELF-PERCEPTIONS AND GLOBAL SELF-ESTEEM IN PORTUGUESE STUDENTS

José P. Ferreira[1,2] and Kenneth R. Fox[1]

[1]*Department of Exercise and Health Sciences, Faculty of Social Sciences, University of Bristol, United Kingdom*; [2] *Faculdade de Ciências do Desporto e Educação Física, Universidade de Coimbra, Portugal*

The Physical Self-Perception Profile (PSPP) (Fox & Corbin, 1989) is one of the most widely used instruments designed to assess self-perceptions in the physical domain. The hypothesized three-level hierarchically organised model of self-perceptions supports the existence of a super-ordinate construct, termed physical self-worth (PSW) which is the result of the weighted combinations of self-perceptions in the four perception sub-domains SPORT, CONDITION, BODY and STRENGTH. Global self-esteem (GSE) represents the apex and the highest level of the hierarchy. The aim of this study was to test this model of self-perceptions with a translated Portuguese version of the PSPP.

The participants for this study were Portuguese students (N=572) from the University of Coimbra. Two samples were used. Sample A (n=223) were 143 males (mean age 21.80±3.39 yrs) and 80 females (mean age 20.92±2.67 yrs) who were attending a Sport Sciences and Physical Education degree course. Sample B subjects (n=349) were 38 males (mean age 22.89±2.66 yrs) and 311 females (mean age 21.78±2.71 yrs) attending a Social Service and Welfare degree course. The PSPP and the Rosenberg Self-Esteem Scale (RSES) were administrated at the end of each class using standardized instructions in quiet room conditions. Data analysis was conducted separately by gender and compared with subjects used in the development of the instrument (Fox & Corbin, 1989) as well as with other cross-cultural validity studies (Hayes, Crocker, & Kowalski, 1999; Page et al., 1993; Van de Vliet et al., in press).

Correlational analysis (zero-order correlation coefficients and partial correlation coefficients) were used to analyse the interrelationships among sub-scales and determine the degree of support for the hierarchical structure among PSPP constructs as well as with global self-esteem.

Table 1 - Zero-order correlation coefficients

	GSE		PSW		SPORT		COND		BODY	
	Sample		Sample		Sample		Sample		Sample	
	A	B	A	B	A	B	A	B	A	B
Female										
PSW	.55*	.51*								
SPORT	.37*	.29*	.59*	.45*						
COND	.33*	.30*	.51*	.49*	.59*	.66*				
BODY	.39*	.47*	.66*	73*	.30*	.29*	.34*	.34*		
STREN	.19	.27*	.37*	.36*	.24**	.51*	.31*	.46*	.08	.23*
Male										
PSW	.42*	.69*								
SPORT	.31*	78*	.65*	.66*						
COND	.30*	.58*	.68*	73*	65*	.77*				
BODY	.33*	.50*	.73*	.66*	.49*	.51*	58*	.67*		
STREN	.26*	.52*	42*	45*	32*	.55*	.32*	.56*	.52*	.35**

* Coefficients significant at .01 ** coefficients significant at .05

Table 2 - Partial correlation coefficients controlling PSW effects

	GSE		SPORT		COND		BODY	
	Sample		Sample		Sample		Sample	
	A	B	A	B	A	B	A	B
Female								
SPORT	.07	.08						
COND	.07	.06	.41*	.57*				
BODY	.03	.17*	-.14	-.07	-.00	-.03		
STREN	-.03	10	.03	.42*	.15	.34*	.23**	-.06
Male								
SPORT	04	.60*						
COND	.01	.15	.37*	.56*				
BODY	.03	.08	.03	.12	.18**	.35**		
STREN	10	.32**	.07	.38**	.05	.38**	.34*	08

* Coefficients significant at .01 ** coefficients significant at .05

The zero-order correlation coefficients (table 1) provide evidence for the proposed hierarchical organisation of the constructs. PSW demonstrated the strongest correlation with GSE. Each of the subdomains showed stronger correlations with PSW than with each other. This relationship supports the existence of PSW construct as a generalized outcome of perceptions in the four sub-domains and as a mediator between these sub-domains and GSE. This was further supported by the partial correlation analysis (table 2) that showed that the relationships between GSE and the four sub-domain scales are extinguished when the effects of PSW were statistically removed. This supports the tenet that PSW functions as a mediating variable between the four sub-domains and GSE. This in turn provides some evidence of the validity and functioning of this Portuguese version of the PSPP.

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CROSS-CULTURAL VALIDITY OF A PORTUGUESE VERSION OF THE PHYSICAL SELF-PERCEPTION PROFILE

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The physical domain has always been included in models of self-esteem and has usually been represented by physical appearance and physical ability constructs, as part of a wider multidimensional and hierarchical model (Shavelson, Hubner, & Stanton, 1976). More recently, Fox and Corbin (1989) developed the Physical Self-Perception Profile (PSPP) and introduced a more elaborate perspective for the assessment of self-perceptions in the physical domain. The PSPP was initially developed and validated with a USA college population, however Fox (1990) recommended its use in other social and cultural contexts in order to analyse deeply it's psychometric properties and establish greater validity and reliability. The aim of this study was to find statistical support for the validity of a Portuguese version of the PSPP with young adults.

The participants for this study were Portuguese students (N=572) from the University of Coimbra. Two samples were used. Sample A (n=223) were 143 males (mean age 21.80±3.39 yrs) and 80 females (mean age 20.92±2.67 yrs) who were attending a Sport Sciences and Physical Education degree course. Sample B subjects (n=349) were 38 males (mean age 22.89±2.66 yrs) and 311 females (mean age 21.78±2.71 yrs) attending a Social Service and Welfare degree course.

The principal component analysis method (with *varimax* rotation) was used with a previous definition of the number of factors to extract, in order to establish the independence and integrity of the original four sub-domain scales SPORT, CONDITION, BODY and STRENGTH (Fox & Corbin, 1989).

Table 1 – Principal components factor loadings for PSPP items (female sample)

Subscale	Items	F1 loadings	F2 loadings	F3 loadings	F4 loadings
CONDITION	2,7,12,22,27	.47,.53, .43,.62,.70			
BODY	3,8,13,23,28		.72,.70, .73,.67,.74		
STRENGTH	4,9,14,19,24,29			.66,.56,.70, .63,.55,.60	
F4	17,21				.61,.60
Eigenvalue		6.36	2.36	1.51	1.26
% Variance		26.52	9 83	6.27	5.26
Cum. % Variance		26.52	36.34	42.62	47 87

Factor loadings below .40 were elimmated for the sake of clarity

Table 2 – Principal components factor loadings for PSPP items (male sample)

Subscale	Items	F1 loadings	F2 loadings	F3 loadings	F4 loadings
SPORT	11,16,21,26	.66,.47, .64,.68			
STRENGTH	4,9,14,24		.77,.67, .69,.69		
BODY	3,8,13,23,28			.65,.70,. 67,.47,.65	
F4	2,19				.69,.43
Eigenvalue		7 52	2.57	1.39	1.30
% Variance		31.33	10.72	5.78	4.41
Cum. % Variance		31.33	42.05	47.83	53.24

Factor loadings below .40 were eliminated for the sake of clarity

The results of the exploratory factor analysis conducted by gender revealed four factors that explained a total of 47.9% of the variance for female and 53.2% of the variance for male students among the sub-scale items. The BODY and STRENGTH sub-scales showed good internal consistency with coefficient Cronbach alpha values of .79 and .74 for female and .78 and .76 for male. The CONDITION subscale in female sample and SPORT subscale in male sample presented lower levels of internal consistency with alpha values of .72 and .68, respectively. Confirmatory factor analysis (CFA) partially supported the goodness of fit for the original model in female Portuguese students but not in male Portuguese students. Comparative Fit Index (CFI) and Nonnormed Fit Index (NNFI) reached .88 and .87 for female but only .78 and .75 for male. Portuguese data replicated the psychometric integrity of PSPP and provided support for the instrument to be used in the female students sample. However, the analyses indicated that there was some confounding of the CONDITION and SPORT constructs for both females and males. This may due to conceptual and cultural differences from college students in the USA on which the instrument was developed. It also reflects findings in other European translated versions such as the Dutch version (Van de Vliet et al., in press). One possibility to be considered in future studies and highlighted for further discussion in the present study is the possibility to develop a unique sub-dimension including the most representative items of CONDITION and SPORT subscales.

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HOW PORTUGUESE WHEELCHAIR BASKETBALL ATHLETES PERCEIVE THEMSELVES IN THE PHYSICAL DOMAIN?

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INTRODUCTION

Several studies suggested that, regardless of the disability type, physical activity and sport enhances self-perceptions among people with disabilities (Blind & McClung, 1997; Campbell & Jones, 1994; Crocker, 1993). However, few studies have analysed more specific dimensions of the physical self, focusing their interests in body management, body image and identity issues (Guthrie, & Castelnuovo, 2001; Sands & Wettenhal, 2000). Ferreira & Meek (2001) used a Portuguese version of the Physical Self-Perception Profile to assess wheelchair basketball athletes self-perceptions in the physical domain and suggested that they may develop their self-perceptions in an alternative way due to environmental as well as disability conditions. The purpose of this study was to identify the main features that are central to wheelchair basketball athlete's self-perceptions in the physical domain, which they use to express their feelings about themselves and about their physical self-worth, in sport settings.

METHOD

Qualitative research interviews (N=14) were conducted by the same person, involving open-ended questions and were standardized to maximize consistency. An interview guide was developed and previously discussed among a group of four expertises to determine the appropriateness of the questions. Participants should meet three criteria: a) to have some kind of physical impairment and use wheelchair to improve their mobility, b) to participate in some form of regular physical activity and training sessions, at least two times per week, and c) to play in the Portuguese national competition during the 2000/01 season, and could refuse to answer any question or terminate the interview at any time. After transcription, participants also had the opportunity to review the transcripts and make corrections or additions.

RESULTS

Preliminary results showed that Portuguese wheelchair athletes focus their attention in features such us: a) personal satisfaction, acceptance and need for personal improvement, b) relationship and comparison with other non-sport participants without disability, c) friends and team mates opinion about themselves, d) proud about sport achievement and physical condition, as well as physical strength, d) differences between physical condition and strength before and after the accident (for those with acquired disabilities), e) personal performance and importance of sport practise, and f) personal opinion about body attractiveness and sexuality, to perceive and express their feelings about themselves in the physical domain.

DISCUSSION

Present findings based on the true stories of individuals with physical disability, involved in sport settings suggest that their self-perceptions in the physical domain are very much influenced by their participation in sport, specially by the life experiences they live, the type of relationships they establish with their team mates and friends, and by the socialization process through which they develop their own identity as wheelchair sport athletes.

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APPENDIX H

Self-perceptions and exercise in groups with special needs: preliminary analysis

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Introduction

The participation of people with disability in sport and recreational activities offers opportunities for individuals to improve their self-perceptions in the physical as well as in the social domain (Blinde, 1997). However the study of particular aspects of physical self and body image in individuals with special needs is still an underdeveloped area of research.

Studies involving the assessment of self-esteem in people with physical disability showed significant association between the level of participation in sports and global self-esteem (Szyman, 1980). After a period of five months of practice in sport competition (Patrick, 1986) a significant increase was found in the self-esteem scores of novice wheelchair athletes when compared with those presented by wheelchair veteran athletes with three or more years of experience.

These results confirmed those reported by Green, Pratt and Grigsby (Green, 1984) suggesting that self-esteem increases during the first years followed by a period of stability four years after the occurrence of the lesion. In all studies those who presented lower initial levels of self-esteem gained the greatest improvements.

Sherrill and colleagues (Sherrill, 1990a) made the first attempt to assess the Self-concept of disabled youth athletes with physical disabilities using a standardized instrument, the Self-Concept Inventory (Harter, 1988). In spite of the gender and age limitations as well as no previous data to compare the results it was suggested that youth disability athletes presented a similar general pattern of self-concept, to the one presented by youth athletes without physical disabilities following a similar pattern found in adult athletes with disabilities when compared with their pears without disabilities. Mean values felt inside of the values reported for non-disabled youth athletes. Some other studies showed that international athletes presented higher levels of self-esteem than national, regional and recreational groups (Campbell, 1994).

Blinde and McClung (Blinde, 1997) examined the impact of recreational activities on perceptions of physical and social self of twenty-three individuals with physical impairment using interview method to explore qualitative aspects of the participation experience. Results revealed several ways in which participation in individualized recreational programs enhanced perceptions of both physical and social self. Participation in the recreational programs impact four areas related to perceptions of the physical self, including: i) experiencing the body in new ways, ii) enhancing perceptions of physical attributes, iii) redefining physical capabilities and iv) increasing perceived confidence to pursue new physical activities.

Taleporos and McCabe (Taleporos, 2001)analysed the impact of physical disability on the body esteem, a multidimensional construct comprised by two dimensions, affect and cognition, and found that physical disability can adversely impact feelings of physical and sexual attractiveness as well as strong negative feelings towards the body as a consequence of shame, discomfort, lack of acceptance of disability, a desire to hide disability as much as possible as well as unhappiness and stress towards the body.

However, the development of physical self-perceptions in disability sport groups have not yet been properly studied, specially now that self-esteem and self-perception components have become increasingly valued in educational, clinical and community health programmes as important indicators of mental well-being (USDHHS, 1999) both in individuals with and without disability. The purpose of this study is to give a contribution to the understanding of physical self-perceptions in disability sport participants involved in different exercise and sport settings, and to understand the role of sport and physical activity as a reliable tool to be used in the development of a positive psychological well-being in individuals with physical disabilities.

Methods

Study one is based in a global sample of N=150 basketball players participating in the Portuguese national competition during 2000 season. Sample D subjects were 64 wheelchair basketball players, 5 females and 59 males from eight teams that played in the national wheelchair competition. The mean age for females was 33.00 ± 8.25 years and for males was 32.80 ± 11.34 years. Sample E subjects were 86 basketball players without disability, 17 females and 69 males from eight different teams competing in different levels of the national competition (professional league, 1st division and 2nd division). The mean age for females was 22.18 ± 2.77 years and for males was 20.91 ± 4.55 years. The small number of female wheelchair basketball players in sample D is due to the fact that no female wheelchair basketball competition exists in Portugal. The small number of female individuals playing the game is integrated in male teams. Participants were tested in small groups ranging from 5 to 12 individuals each after training sessions or after national competition games, with previous consent from the coaches and from the national organization. The purpose of the study was explained and each athlete received a test battery containing a Portuguese version of the Physical Self-Perception Profile - PSPPp (Fonseca, Fox, & Almeida, 1995) administered by the same research assistant using standardized instructions and being available to answer any questions during administration period. Difficulties with the structured-alternative format were found with wheelchair sport participants as well as other additional difficulties. In some particular cases interview method was used to fill the questionnaires due to the interviewees low level of academic qualifications and difficulty to read and understand the meaning of the different items. Objective instructions were given to all participants as well as encouragement to ask for one-to-one help in the first few minutes of administration, however six questionnaires (8.6%) had to be excluded.

Results

The pattern of mean values presented in sample D and sample E is similar to those found in previous studies, in groups with similar characteristics (table 1). Female athletes (samples D and E) present higher mean score values than female Portuguese sedentary groups (Ferreira & Fox, 2002a, 2003), samples B and C, for all PSPP sub-domains. Female wheelchair basketball players present higher mean score values for all PSPP sub-domains than sedentary female groups without disability. However, they present lower mean score values than their basketball colleagues without disability (sample E).

Table 1– Means and standard deviations from PSPP subscales - basketball players with and without disability

Subscales								
	Sample D		Sample E		*Ferreira & Fox, 2002a* *Sample B*		*Ferreira & Fox, 2003* *Sample* C	
Female	n=5		n=17		n=311		n=255	
	M	SD	M	SD	M	SD	M	SD
SPORT	14.60	3.21	18.12	2.45	13.25	3.24	13.82	3.13
CONDITION	15.20	3.11	19.47	2.90	13.24	3.18	14.22	3.22
BODY	14.00	5.15	16.82	2.92	13.75	3.74	13.42	3.51
STRENGTH	18.40	3.91	17.29	3.84	13.28	3.01	13.91	3.07
PSW	15.40	3.65	18.71	3.51	13.89	3.74	14.17	3.54
GSE	23.60	2.88	33.82	4.14	30.23	3.97	28.55	3.94
Male	n=59		n=69		n=38		n=225	
	M	SD	M	SD	M	SD	M	SD
SPORT	16.78	3.17	17.32	2.80	14.76	3.98	16.36	3.33
CONDITION	16.54	3.19	17.32	2.85	14.68	3.28	16.12	3.49
BODY	15.00	3.30	16.07	3.10	14.16	3.66	15.50	3.25
STRENGTH	16.37	3.06	15.94	3.02	14.47	3.05	15.28	3.09
PSW	16.59	3.63	16.93	2.80	15.03	3.77	16.26	3.41
GSE	23.56	3.45	30.19	4.28	30.84	4.57	30.88	4.55

The pattern found is much similar to males as it was for females. Male athletes (samples D and E) also present higher mean score values than male sedentary groups (samples B and C) for PSPP sub-domains with an exception for Body sub-domain between wheelchair sport athletes (sample D) and Portuguese sedentary students (Ferreira & Fox, 2003), sample C. Male wheelchair basketball players present higher mean score values for all PSPP sub-domains

(except for body sub-domain) than sedentary male groups without disability (samples B and C). However, they present similar mean score values than their basketball colleagues without disability (sample E).

Table 1 also presents mean score values for global self-esteem variation over samples, for male and female sub-groups. Both wheelchair female and male sport athletes present lower mean score values than their basketball colleagues without disability (sample E) as well as when compared with other sedentary groups without disability (samples B and C). Female basketball players present higher levels of self-esteem than any other female group, however male basketball players present a similar level of self-esteem to the one presented by sedentary male groups.

Exploratory factor analysis (EFA) using principal components analysis method (with Varimax rotation) was used for each sample in order to establish the independence and integrity of the PSPP original four sub-domain scales Sport, Condition, Body and Strength (Fox, 1989) in Portuguese basketball players with and without disability. EFA was performed forcing to four the number of factors to extract and retaining for further analysis. The final factorial structure was selected based on the same criteria previously used for validation of the PSPPp for the Portuguese population (Ferreira & Fox, 2002b, 2003). The results of the preliminary EFA from Portuguese basketball players with disability revealed four initial factors that explained a total of 50.70 % of the variance among the subscale items for players with disability. Because of the small number of female players in Portuguese wheelchair basketball no gender differences were analysed in EFA for this sub-sample. EFA for basketball players without disability revealed four initial factors that explained 71.00% of the variance for female and 46.85% of the variance for male players without disability. Results of EFA from basketball players without disability found support for the hierarchical model suggested by (Fonseca & Fox, 2002) and (Ferreira & Fox, 2002b, 2003) for the Portuguese population with a clear definition of Physical Confidence, Body and Strength as sub-domains for the physical self. In the specific case of wheelchair basketball players EFA results partially supported this model, with only two factors Physical Confidence and Body being clearly defined.

Subscales for wheelchair sport athletes showed an acceptable internal consistency with coefficient Cronbach Alphas values of .79 and .66 for Physical Confidence and Body and as well as for female and male basketball players without disability with Alpha values of .84, .73 and .92 for female and .65, .62 and .73 for male both in Physical Confidence, Body and Strength sub-domains, respectively.

Table 2 - Zero-order correlation and partial correlation coefficients controlling PSW effects – wheelchair basketball players (sample D)

	GSE	PSW	PHYCONF	BODY
PSW	.18			
PHYCONF	.04 (-.05)	.45*		
BODY	-.03 (-.15)	.52*	.20 (-.05)	
STREN	.07 (-.03)	.48*	.28** (.09)	.40* (.20)

Partial correlation coefficients controlling PSW effects presented in brackets
* Coefficients significant at .01 ** Coefficients significant at .05

The subscale interrelationships for the Portuguese model were analysed using zero-order and partial correlation coefficients, in order to determine the degree of support for the hierarchical structure among constructs with the wheelchair basketball players sample.

Zero-order correlation coefficients of the Portuguese wheelchair basketball players provides partial evidence for the proposed hierarchical organization with global self-esteem. GSE correlated more highly with PSW sub-domain than all the other subscales at the base of the hierarchy. Each of the sub-domain scales showed a stronger relationship with PSW than with GSE as it was expected. This relationship supports the existence of PSW construct as a generalized outcome of perceptions in the four sub-domains and as a mediator between these sub-domains and GSE. However, and in spite of the weaker relationship between the three sub-

domain scales when controlling the PSW effects, partial correlation coefficients also showed that the relationship between GSE and the three sub-domain scales increase when the effects of PSW were statistically removed, providing a lack of support to the idea that PSW appeared to function as a mediating variable between the three sub-domains and GSE. Multiple regression analysis (*stepwise* method) revealed that the three sub domain scales were able to explain 44.4% of the variance in PSW for the Portuguese wheelchair sport athletes population.

Finally, significant statistical differences were found for both Physical Confidence and Body PSPPp sub-domains ($p < .05$) between basketball players with and without physical disability, with players without disability showing higher mean score values for Physical Confidence, Body and PSW but lower mean score values for Strength and GSE.

Differences for GSE were also found between athletes doing sport for 2-4 yrs. ($p < .01$) as well as between athletes doing sport for 11 or more yrs. ($p < .000$), with and without disability. Differences for Body ($p < .000$), Phyconf ($p < .01$) and GSE ($p < .000$) were found between athletes doing sport for 5-10 yrs. with and without disability.

Differences for Body ($p < .05$), Phyconf ($p < .000$) and GSE ($p < .000$) between national athletes with and without disability and differences for GSE ($p < .000$) between international athletes with and without disability.

Gender differences were also found among basketball players without disability. Females scored higher than males for all PSPPp sub-scales and differences were significant on Physical Confidence ($p < .05$) and PSW ($p < .05$), as well as in global self-esteem ($p < .01$). These differences between females and males have also been reported for the all student samples however with males scoring higher than females for all PSPP sub-scales. Significant statistical differences were also found for the male sample between adolescence (8-20 yrs.) and juvenile adulticia (21-40 yrs.) groups, with older males scoring higher for Strength ($p < .05$) and PSW ($p < .05$) sub-scales, as well as for GSE ($p < .01$).

Discussion

The purpose of this study was to investigate reliability and validity of the Portuguese version of the Physical Self-Perception Profile, the PSPPp, with Portuguese basketball athletes and determine if this instrument is sensitive enough to assess their self-perceptions in sport settings. Comparison between the two samples supported the hypothesis that basketball athletes without disability would produce higher mean score values on the PSPP as well as on the GSE for both male and female sub-groups than wheelchair basketball athletes. Comparison between basketball athletes with and without disability and sedentary individuals without disability would support the hypothesis that basketball athletes would produce higher mean score values on the PSPP as well as on the GSE than sedentary individuals without disability. This hypothesis was partially supported. However, male wheelchair athletes (samples D) present a lower mean score value for Body sub-domain when compared with male sedentary groups (samples C). A reason for this might be that male wheelchair athletes perceive their body attractiveness more poorly than male individuals not doing any sport activity. Considering the importance attributed to appearance and image in today's society, physical impairment may have an important impact on the way people with physical disability perceive their bodies. Individuals with physical disability, in particular during late adolescence and early adulthood, may be more sensitive and critical about their physical appearance, especially during a period when their colleagues without disability value the shape and the size of their bodies in such a positive way. This pattern was not found in female wheelchair sport athletes probably because the Body is also a very strong source of stress and conflict, for sedentary female adolescents and young adults without disability during this period.

Wheelchair sport athletes also presented lower mean score values for self-esteem when compared with their basketball colleagues without disability (sample E) as well as with other sedentary groups without disability (samples B and C). These athletes scored high values in Sport, Condition, Body and Strength, however these perceptions appear not to be seen as having an important influence over the global self-esteem. These apparent difference in the pattern presented for physical self-perceptions and for global self-esteem might be understood as, in spite of considering the physical part of their bodies as something relevant for their daily lives, wheelchair sport athletes consider that this physical part doesn't play a determinant role on influencing approval or disapproval attitudes towards their individuals believes about their own

competence, significance or respectability, i.e., it doesn't influence much their individual degree of favourable perceptions of their own self.

In the validation process support was provided to the three factors model previously suggested by Fonseca and Fox (2002), and Ferreira and Fox (2002b, 2003) for the Portuguese population. However, and in spite of the major portion of contents used to express general feelings of physical self-worth arises from the three sub-domains used in the PSPPp, limited support was found in the wheelchair basketball players sample for the existence of PSW as a mediator between these and GSE.

In conclusion, PSPP showed limited sensitivity to be used confidently on the assessment of Portuguese wheelchair sport athlete's self-perceptions in the physical domain. In these sport settings, individual's self-perceptions may be developing in an alternative way, due to the specificity of the group as well as to environmental and socialization conditions in which the sport occurs.

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Evidence of cross-cultural validity and reliability of a Portuguese version of the Physical Self-Perception Profile

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Introduction

The Physical Self-Perception Profile (PSPP) of Fox and Corbin (Fox, & Corbin, 1989) is one of the most widely used multidimensional instruments to measure physical self-concept. Its psychometric properties have been established through several published studies with a range of populations, in cultures other than the original US population used in its development. These include English (Page et al., 1993), Spanish (Atienza, Balaguer, & Moreno, 1997), Russian (Hagger, Ashford, & Stambulova, 1998), Turkish (Asci, Asci, & Zorba, 1999) and Flemish populations Van de Vliet et al. (2002) . This instrument has also been used with other age groups than university or college students, such as children and youth (Welk, Corbin, & Lewis, 1995; Whitehead, 1995; Eklund, Whitehead, & Welk, 1997; Hagger, Ashford, & Stambulova, 1998; Crocker, Eklund, & Kowalsky, 2000) and adults in their middle or later years (Sonstroem, Speliotis, & Fava, 1992) with good results. However, in some of the studies involving translation from English, questions have been raised over the factor structure of the PSPP. Recently, Van de Vliet et al. (2002) suggested a new three-factor model for the PSPP developed in Belgium for healthy and psychiatric populations and found through confirmatory factor analysis that the combination of the Condition and Sport sub-scales provided a better solution. Recently, several studies (Ferreira & Fox, 2002a; Fonseca & Fox, 2002) using the Portuguese version of the Physical Self-Perception Profile (PSPPp) suggested the possibility of a three-factor structure and psychometric properties were tested with college students, however the validation for the Portuguese population has not yet been fully achieved. The purpose of this study was to find further statistical support for the hypothesized three-factor structure proposed by Ferreira and Fox (2002a) for the Portuguese youth population with a new sample of adolescents.

Method

Participants were Portuguese secondary school students (N= 480), 225 males (mean age 17.43 ± .64 yrs) and 255 females (mean age 16.82 ± 1.07 yrs) from eight secondary schools in the center of Portugal. The instruments were administered as part of the test battery including PSPPp and the Portuguese version of Rosenberg Self-Esteem Scale (RSES). The procedures and the purpose of the study were explained to the participants. Each student received a test battery, and questionnaires were administered by the same research assistant using standardized instructions in quiet classroom conditions, during the last fifteen minutes of the physical education classes. Data analyses were conducted separately by gender. Difficulties with the structured-alternative format were found in this sample as previously reported by (Marsh, 1994) and (Fox, 1998). A small number of participants were confused and did not follow the initial instructions. Percentage of spoiled returns was 3.3% with a total number of sixteen questionnaires being excluded. Reliability for the PSPPp and the Portuguese version of RSES was performed using a re-administration of the instruments to a sample of twenty students, ten female and ten male, after a lapse period of 16 days. Criteria for the test-retest sample selection was also performed on a lottery basis and test-retest reliability was assessed using Pearson correlation coefficients for subdomain mean scores from the first and the second administration. These coefficients ranged from r= .66 to .82 for female and from r=.58 to.89 for male. The PSPP therefore demonstrated preliminary evidence stability. Moreover, RSES also presented a test-retest reliability value of r=.64 with a two weeks period between applications.

Results

The full range of descriptive statistics was calculated for all domains and sub-domains. An alpha level of .05 was used for all statistical tests. The pattern of mean score values presented in this study was similar to the one found by Ferreira and Fox (2002b) with Portuguese university students as well as those presented in previous studies (Fox, 1990; Page et al., 1993; Hayes, Crocker, & Kowalsky, 1999), particularly in groups with similar characteristics. Portuguese female secondary school students showed lower mean score values for Body and Physical Self-Worth subdomains but higher mean values on Sport, Physical Condition and Strength, when compared with their Portuguese female university equivalents. Portuguese male secondary school students showed lower mean value scores for all the PSPP sub-domains when compared with their Portuguese male university counterparts. Further evidence of statistical support for the hypothesized three-factor model proposed by Ferreira & Fox (2002a) for the Portuguese youth population was tested. CFA was conducted by gender as a follow-up and the model (Figure 1) was re-assessed using this new sample of Portuguese secondary school students.

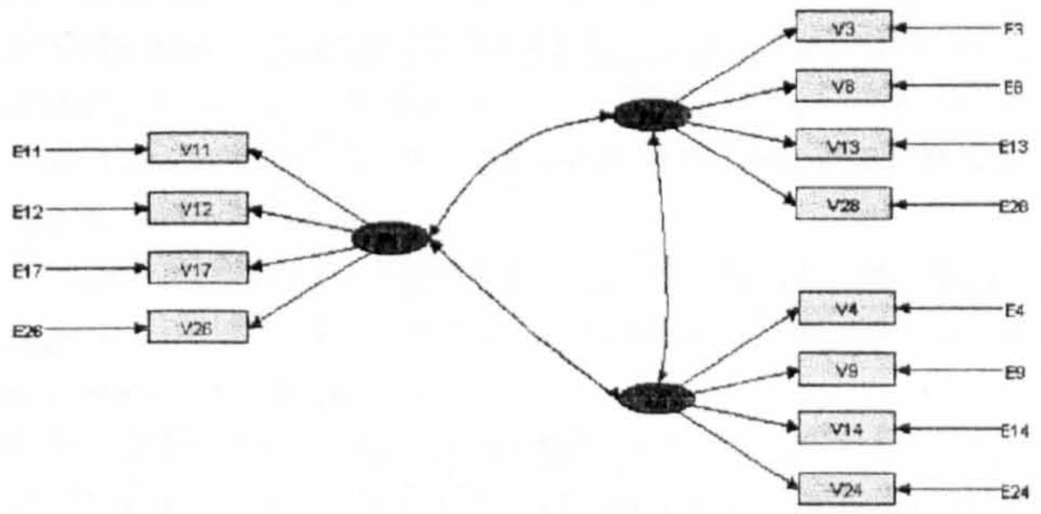

Figure 1 – Three factors four items per factor model

Previous studies using this model showed higher indices of overall model fit for the Portuguese youth population. The model was specified in an attempt to a) reduce the size of the original instrument as it has shown during application procedures, to be quite time consuming, and b) further reduce factor cross loadings. Previous analyses indicated that problems usually occurred with the fifth and sixth items of some factors. Therefore, the highest items from Sport and Condition sub-domains were again combined and used to create Physical Confidence sub-domain (F1). Additionally, the Body (F2) and Strength (F3) sub-domains were also reduced with the weakest two items eliminated.

Table 1 – Goodness of fit statistics for female and male secondary school students

Samples		χ^2	*df*	*p*	χ^2/df	*CFI*	*NFI*	*NNFI*	*SRMSR*
Present study									
Female	n=255	98.69	51	< .001	1.94	.88	.78	.85	.042
Male	n=225	119.01	51	< .001	2.34	.83	.74	.78	.056
Ferreira & Fox, 2002b									
Female	n=391	80.74	51	< .001	1.58	.97	.92	.96	.032
Male	n=181	108.33	51	< .001	2.12	.90	.83	.87	.048

The χ^2 values obtained for female (98.69) and male (119.01) sub-samples differ significantly from the independence model ($p < .001$). The CFI, NFI and NNFI indexes across the different sub-samples were .88, .78 and .85 for female and .83, .74 and .78 for male. χ^2/df values, a ratio value used to assess the adjustment to the model, were lower than 3.0 showing a good adjustment with values of 1.94 for females and 2.34 for males. The analysed model of three correlated latent variables showed a better goodness of fit for female than for male sub-samples, however, the results were unsatisfactory in both cases.

Discussion

Confirmatory factor analyses (CFA) did not support the goodness of fit for this model in female and in male Portuguese secondary students. Non-normed Fit Index (NNFI) and Comparative Fit Index (CFI) reached .85 and .88 for female but only .77 and .82 for male. Goodness of fit index values did not reach the conventional value of .90, however, results were similar to other studies with the Portuguese students (Ferreira & Fox, 2002b) where the goodness of fit for this three-factors model was better in female than in male sub-samples. Zero-order and partial correlation coefficients were used to analyse the interrelationships among sub-scales and determine the degree of support for the hierarchical structure among PSPP constructs and with global self-esteem (GSE). Relationships found supported the function of PSW as a generalized outcome of

perceptions in the three sub-domains and as a mediator between these sub-domains and GSE. The relationships between GSE and the three sub-domain scales were extinguished when the effects of PSW were statistically removed and this supports the tenet that PSW functions as a mediating variable between the three sub-domains. Although the instrument appears to produce similar relationships as the original version, the factorial validity is not yet fully established with Portuguese adolescents. A possible explanation is that Portuguese adolescents do not have a fully differentiated view of their physical selves that is found in other populations.

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APPENDIX I